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INTERNATIONAL BUREAU OF THE AMERICAN REPUBLICS,
WASHINGTON, U. S. A.

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PARAGUAY.

SECOND EDITION,
REVISED AND ENLARGED

BY

JOSÉ SEGUNDO DECOUD,

*Honorary Corresponding Member of the International Union
of American Republics,*

WITH

A CHAPTER ON THE NATIVE RACES

BY

DR. J. HAMPDEN PORTER.

SEPTEMBER, 1902.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.

1902.



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REPUBLIC OF BOLIVIA

A MAP OF THE REPUBLIC OF PARAGUAY

DRAWN BY DR E. DE BOURGADE

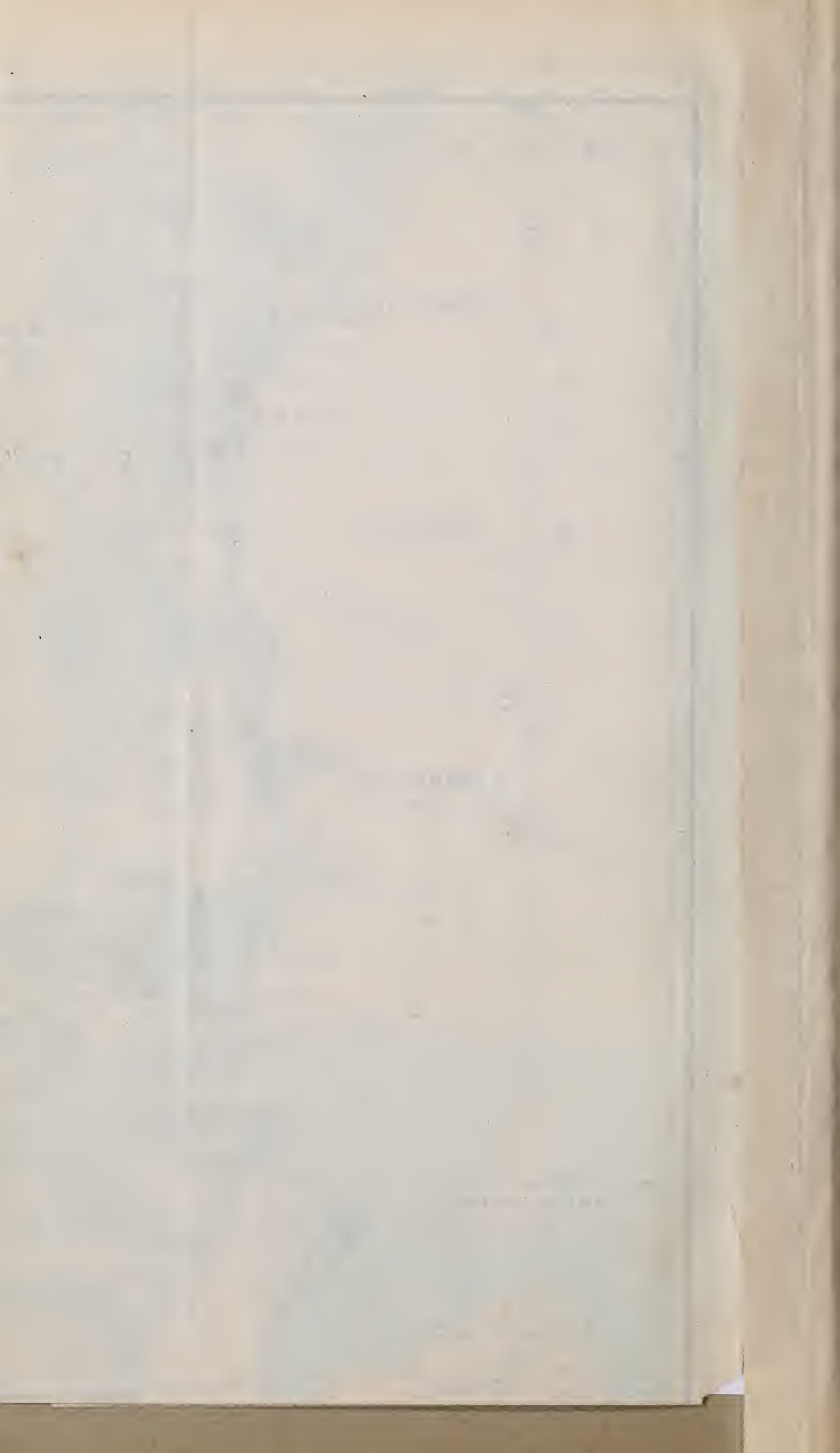
Based upon his own observations, made 1857-1858, the unpublished Documents
of the Boundary Commission of 1871-73, and the Maps
of Monchez & Toppen

1889

Scale picture, 11 Statute Miles to the Inch

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THE CAPITAL OF PARAGUAY.

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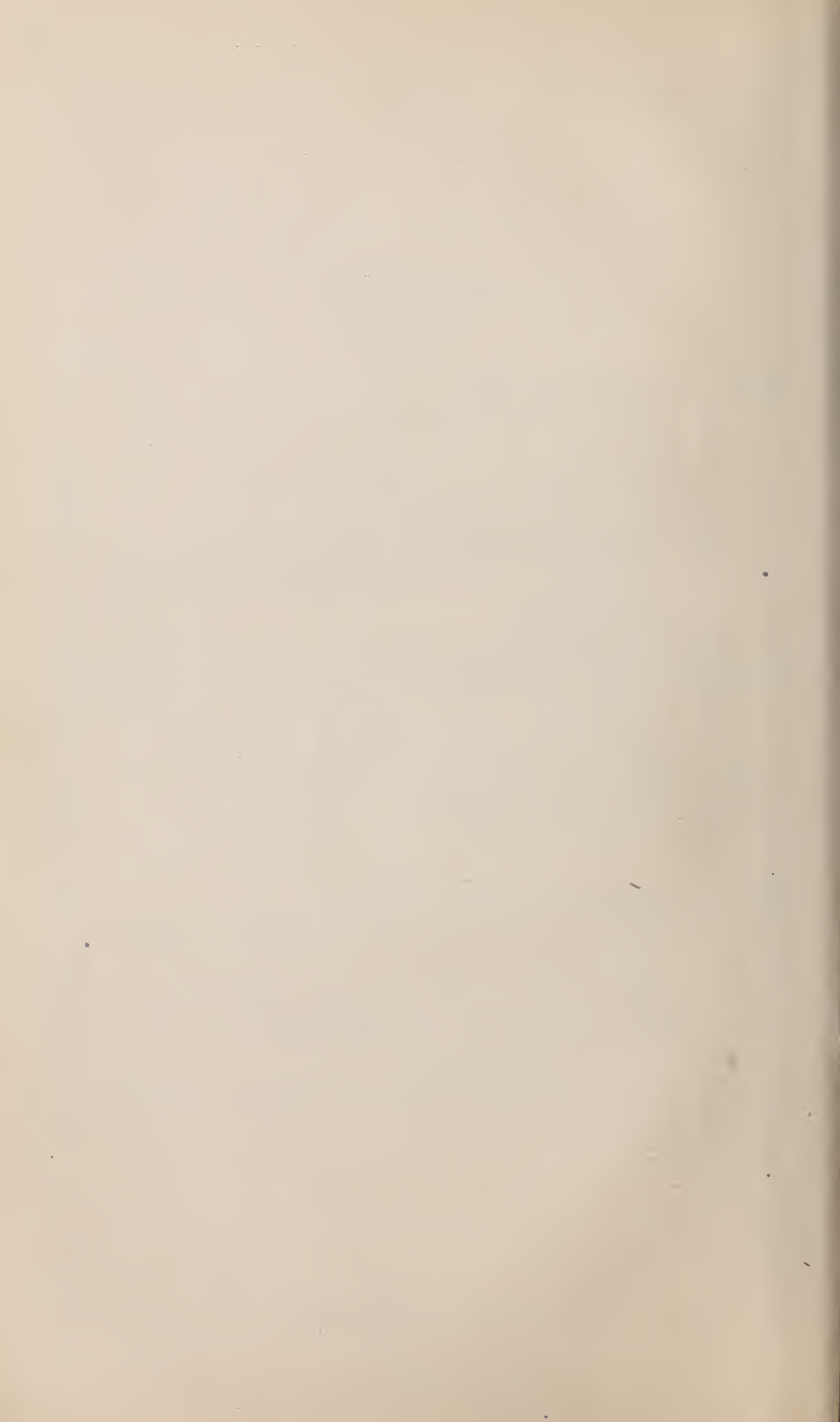
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PARAGUAY.

Chapter I.

THE PARAGUAYAN TERRITORY.

The Republic of Paraguay is an inland State, inclosed between the United States of Brazil, the Argentine Republic, and the Republic of Bolivia, and situated between $20^{\circ} 10' 14''$ and $27^{\circ} 35'$ south latitude and $54^{\circ} 37'$ and 62° longitude west of Greenwich.

During the first period of the Spanish domination Paraguay was called "the Province of Paraguay," and included all the territory east of the Andes and south of Brazil; but in 1617 a royal ordinance divided it into two provinces, and established at Buenos Ayres the seat of Government. In 1776 the Governor was raised to the rank of Viceroy.

In 1811, when Paraguay proclaimed its independence, its area was 86,310 square miles.

At the end of the war which Paraguay had to fight—from 1865 to 1870—against the allied forces of the Brazilian Empire, the Argentine Republic, and the Republic of Uruguay, Paraguay was stripped of a portion of its fairest lands, it being forced to cede to Brazil an important part of its territory, north of the river Apa and of the Maracayú Range, where the richest Paraguayan "yerbales" are situated.

By the treaty of February 3, 1876, between Paraguay and the Argentine Republic, another portion of the territory which the Paraguayan people had always claimed to be theirs, and which now forms the Argentine district of Formosa, between the Bermejo and the Pilcomayo rivers, was likewise surrendered.

At present Paraguay is bounded on the north and the west by Bolivia, on the north and the east by the United States of Brazil and the Argentine Republic, and on the south and the west by the Argentine Republic.

The Paraguay River, which runs from north to south across the whole Republic, divides it into two sections, which are named, respectively, El Paraguay Oriental, or simply Paraguay, and El Paraguay Occidental, also called El Gran Chaco or El Chaco Paraguayo.

El Paraguay Oriental (Eastern Paraguay) lies on the left bank of the Paraguay River, between its waters and the Brazilian and the Argentine frontiers. El Paraguay Occidental (Western Paraguay) lies on the opposite bank of the Paraguay River, between its waters and the frontiers of Bolivia, Brazil, and the Argentine Republic, and is mostly a desert, Villa Hayes, Fuerte Olimpo, and Bahía Negra being the only corporate towns within its limits. There are, nevertheless, in this region numerous cattle ranches, sawmills, and some industrial establishments.

The eastern region of Paraguay has an area of 168,741 square kilometers (104,850 square miles). The area of the western region is approximately 147,253 square kilometers (91,499 square miles). The total area in square kilometers is 315,994, and in square miles 196,349.

The limits between Paraguay and Brazil and Paraguay and the Argentine Republic are now settled and well defined.

The convention of March 26, 1872, between Paraguay and Brazil fixed the limits between the two countries in the following language:

The bed of the Paraná River from the mouth of the Iguazú, latitude 25° 30' S., to the Salto Grande, latitude 24° 7' S. From these falls the line runs about due west along the highest divide of the Sierra de Maracayú to the termination of the latter; thence as nearly as possible in straight line northward along the highest ground to the Sierra de Amambay, following the highest divide of that sierra to the principal source of the Apa, and along the bed of that river westward to its junction with the Paraguay. All the streams flowing north and east belong to Brazil and those south and west to Paraguay.

The Commission, which has passed into history under the name of The Boundary Commission of 1872-1874 was intrusted with the actual location of the frontier as agreed upon, and did its work satisfactorily.

Another convention, concluded on the 3d of February, 1876, between Paraguay and the Argentine Republic, provided for the proper determination of the respective frontiers. The territory between the Pilcomayo and the Bermejo rivers, which the Argentine Republic had claimed to be hers, was surrendered; but the part of El Chaco which extends from Bahía Negra to the Río Verde was acknowledged to belong to Paraguay. The other section of El Chaco, which lies between the Río Verde and the Pilcomayo, was subsequently adjudicated to Paraguay by the award of the President of the United States, chosen by both Governments as arbitrator to settle the dispute. The text of this award, dated November 12, 1878, is given at the end of this handbook as Appendix No. 2.

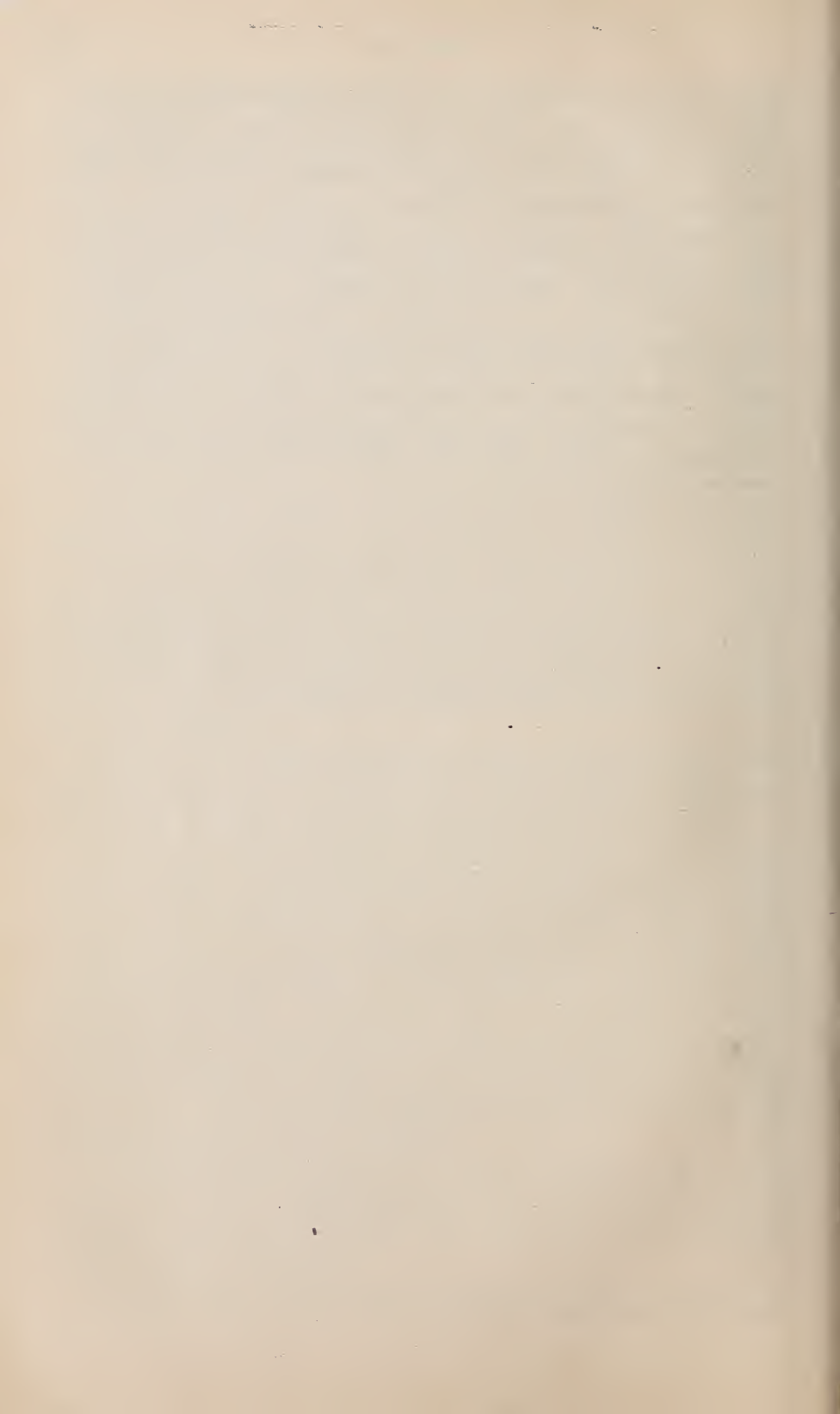
In commemoration of this event, and as a compliment to the arbitrator, the name of Villa Occidental was changed amid salvos of artillery and pealing of church bells into that of Villa Hayes, by which name it is now known.

The question of limits between Paraguay and Bolivia has not been as yet settled. This question, which apparently has no practical impor-

tance, on account of the unpopulated condition of the disputed territory, affects, however, considerably the interests of Bolivia. It involves for the latter country the important problem of securing easier and prompt access to the Atlantic Ocean, and of obtaining in this way better facilities of communication with Europe.

A treaty, which goes by the name of "the Ichaso-Benitez treaty," was concluded on the 23d of November, 1894, for the purpose of putting an end to this controversy, but it failed to secure ratification.

The message sent to the Paraguayan Congress on April 1, 1902, by Vice-President Carvallo, acting President of the Republic, says: "Frank and cordial friendship exists between us and all civilized nations. The only difference which we have is with our sister Republic, Bolivia, but I entertain the utmost hope that this Government and the Government of Bolivia will settle satisfactorily to both parties this boundary dispute."



Chapter II.

TOPOGRAPHY AND GENERAL APPEARANCE.

Mr. E. L. Baker, Consul of the United States of America at Buenos Ayres, in his report on "Paraguay, its commercial, industrial, and political condition," dated December 15, 1893, and published in No. 39 of the Consular Reports of the United States, March, 1884, expresses himself as follows:

The general appearance of Paraguay is far more attractive than either Uruguay or the Argentine Republic. The right bank of the river Paraguay presents an uninterrupted fringe of dense forests, which stretch across to the eastern boundaries of the country and embrace a hundred different varieties of timber trees. On the opposite shore, skirting the Chaco, are open meadows of immeasurable extent, widening out among groves of palm and cocoanut trees. In the extreme southern limits of Paraguay the mesopotamia is an alternation of low prairies and vast lagunas, covered with a rank vegetation, and swamps, which extend northward for a considerable distance. * * * The country is almost bisected by a range of mountains running north and south, which in the north is called the "Cordillera de Amambay," and in the south is designated by the name of Caaguazú. * * * There are many lateral spurs or smaller mountains, with intervening water courses, all of which tend to give a most pleasing variety to the natural scenery and a healthful virtue to the climate.

The branch or spur of the Amambay Mountains called Maracayú Ridge, which runs eastward, produces on crossing the Paraná River the famous Guairá Falls, a proper notice of which will be given hereafter.

Mr. Frank D. Hill, Consul of the United States at Asunción, submitted to his Government, on January 23, 1889, a very interesting "Report on the history, geography, resources, people, products, government, commerce, etc., of Paraguay," which was printed in No. 104 of the Consular Reports, above cited, April, 1890, from which the following is taken:

In considering the relief of the country, the general level of the lowlands in the west and of the Chaco may be taken to be 250 or 300 feet above that of the sea, and no part of the country appears to be much higher than 2,000 feet. The eastern or Paraná side of Paraguay is, however, much higher than the western. A chain of heights, termed "The cordillera," runs southward through the middle of the country parallel to the Río Paraguay and the Alto Paraná, ramifying east and west

in some districts. A mass of elevated land in the west, isolated from the central chain by the lowlands of the Tebicuari and the Manduvira rivers, and another plateau in the south in the Misiones are the chief elevations besides those of the Cordillera. The northern portion of what is termed "The Cordillera" has no title to this name, since it proved to be distinctly a southern continuation of the broad plateau of Brazil. This plateau of San José Amambay is about 2,000 feet high, and has a western declivity sloping to the Paraguay River. In the center of the country the heights are named "The Cordillera of Caaguazú." Further south the Cordillera of Villa Rica extends from the head of the basin of the Tebicuarí to the bluffs of the Rio Paraná at Encarnación. In latitude 24° an extensive branch of the main stem trends to the east, and crossing the Paraná forms the grand cataract of Guayrá. The southeastern portion of the country is the region of the "esteros," or low swamp lands, the abode of herons, storks, and snakes.

The position of Paraguay, between the Paraguay and Paraná rivers, far distant from the sea, quite corresponds, as has been felicitously said by Consul Baker, of Buenos Ayres, to that of the State of Illinois, whose southern boundary is at the junction of the Ohio and Mississippi rivers, and a thousand miles from the Gulf. But, although it has, like Bolivia, no seaboard, there is a certain compensation in its great fluvial system. From Buenos Ayres one steams up the broad estuary, miscalled the River Plate, past the confluence of its great sources, the Uruguay and Paraná rivers, which meet 40 miles above the city, and descends the Paraná River 800 miles to its junction with the Paraguay at Tres Bocas, a score of miles above Corrientes. Thence Asunción is reached by traversing the Paraguay River 300 miles.

Eastern Paraguay, or Paraguay proper, is not, by any means, as can be seen from the above quotations, a mountainous country; but in contrast with the monotonously level pampas of the Argentine Republic, its diversified surface may well seem so. Nevertheless, the term mountainous can hardly be applied to chains of hills whose greatest height scarcely exceeds 1,500 feet above the level of the sea. From the banks of the Paraguay River to the eastern frontier there is one continuous panorama of gently undulating plains, bordered by verdure-clad hills. The interior of the country is not as yet well known. Some of its vast virgin forests, which are found on the east and north, interpose barriers which have on some occasions driven back the hardiest explorers. Outside of the valley, which extends from Asunción, the capital, to Villa Encarnación, the terminus of present railroad projects, and certain well-frequented roads leading to the "yerbales," the rich agricultural regions of the country, there are very few known routes of communication by land. Such geographical knowledge as we have of Paraguay is mainly derived from following the course of its magnificent rivers.

With reference to western Paraguay, or El Chaco, the interior of which is almost entirely in the possession of nomadic tribes of Indians, some of them hostile to the white man, and in which, up to a very late date, there have been no more settlements than Villa Occidental or Villa Hayes, 18 miles above Asunción, and Fuerte Olimpo, near the northern boundary, almost exactly upon parallel 21°, Mr. John E. Bacon, Chargé d'Affaires of the United States in Paraguay and Uru-



PALM GROVES IN EL CHACO.

guay, wrote to the Secretary of State of the United States in October, 1888, the following:

This Chaco, or Gran Chaco, as it is called, is an immense territory lying to the west and northwest of the rivers La Plata, Paraguay, etc., and has been, until the last ten or twenty years, regarded as comparatively worthless, owing to its supposed impenetrable swamps, dense morasses, and uninhabitable territory. The recent tide of immigration, however, to the Plata Valley gave rise to surveys of portions thereof and disclosed astounding developments of its fertility, salubrity, and other desirable qualities. These qualities, as gradually developed, have given rise to great contentions as to proprietorship thereof by the neighboring States, especially those of the Argentine Republic, Paraguay, Chile, and Bolivia. The limits, so far as the Argentine Republic and Paraguay were concerned, were left to arbitration (as is known) to President Hayes, who decided in favor of Paraguay. This decision has been of far greater importance in every way, especially financially, than was anticipated. Indeed, there has poured into the Paraguayan treasury from the sales of lands accorded to the Government by said arbitration a large amount of money, and it has been greatly instrumental in the rapid improvement, financial and otherwise, of the Republic.

Mr. Edmund Shaw, United States Consul at Asunción, in another report, dated December 14, 1891,^a gives further information on this subject, and says:

The general aspect of the Chaco is very pleasing to the eye. Forests of large and very superior trees, mostly evergreens, interchanged with rich pasture lands unexcelled for grazing purposes, meet the eye at every turn. The different kinds of wood which grow in these forests are mostly hard and very heavy, in fact too dense to raft down the river, which certainly is a drawback to the exportation of this timber. The soil is everywhere exceedingly rich, being black humus, loam, and marl. All kinds of grain, sugar cane, tobacco, and fruits can be grown to perfection, but there is little or no land under cultivation at the present time, the country only being inhabited by large bands of roving Indians, who are extremely lazy and indolent.

A portion of the El Chaco territory south of Fuerte Olimpo has been surveyed and sold. The lands situated on the banks of the Paraguay River, for a distance of over 30 miles inland, are used for stock raising, and sell as high as lands in any other section of the Republic. They enjoy a well-deserved reputation for the superiority of their pastures, and the immensity of palm trees and trees of all kinds which grow on them.

Up to the present time no practical result has been reached from the explorations which have been made on the Pilcomayo River. The navigation of this river, except for a distance of 50 leagues (150 miles) from its mouth, continues to be a very difficult problem. Referring to this subject, Mr. Shaw says:

In 1880 Dr. Crevaux tried to navigate the river, going with the current from Bolivia toward the mouth, but he only succeeded in reaching a point 23° south latitude, where he was killed by the Indians and his expedition destroyed. The

^aReport of Consul Shaw, of Asunción, on "Paraguay: Situation, resources, products, government, people, commerce, etc." (Consular Report No. 138, March, 1892.)

remains of his boats were discovered later on by Captains Baldrich and Fontana in 1882. Feilberg in 1885, Storm in 1890, and Page in 1891 all tried to navigate this river, entering its mouth opposite Lambaré and going toward its headwaters. All these expeditions have given the same result, viz, the navigators have been obliged to return without having reached farther than 23° south latitude, where as a rule the river is dry, with nothing more than a sandy and rock channel, unfit for the navigation even of small boats. But it appears that at 21° 50' or 22° south latitude the river divides into two arms, which inclose the island of Ybezeta, and which join again in latitude 25° south. The whole of this big island appears to be arid, sandy, stony, and uninhabitable, dry in the hot season, and marshy to excess in the wet. Fontana went up the eastern side of the island in 1882, and Feilberg and Storm the western without any success. In 1890 it was discovered by Freund that the reason of the want of water in the Lower Pilcomayo is owing very likely to the fact that the river had left its old channel and flows into a new one, which reaches the Paraguay River in 23° south latitude, running for at least 100 leagues in a nearly easterly direction.

An exploring and surveying party under the command of Mr. Freund went up this branch of the Pilcomayo River and found it navigable, there being 20 feet of water in the channel, the river being about 125 yards in width during seven days' steaming up the river. At this point the river was found to be blocked with fallen trees and floating timber, though still having the former depth of water. It is, therefore, a very feasible scheme, with the expenditure of a nominal sum of money, to make this channel the direct outlet for all Bolivian products and manufactures via the Paraguay River to Buenos Ayres and Montevideo.

Mr. Gustavo Marguin, an official in the Bureau of Hydrography of the Argentine Republic, referring to the Fontana expedition, says:

The problem of the navigation of the Pilcomayo River has not been solved.
* * * Nevertheless, it can be said that the work of removing the numerous obstacles, such as trees, roots, etc., which obstruct the river from its mouth to 24° 57', would not be very difficult, and that the navigation of that part of the river would then become very easy.

Chapter III.

PARAGUAYAN RIVERS AND LAKES.

Paraguay possesses two first-class fluvial ways of communication, which place its people in relation not only with Brazil, the Argentine Republic, and Uruguay, but also with the Atlantic Ocean and with Europe and the rest of the world.

These two ways are the Paraná and the Paraguay rivers, which are enriched by several tributaries, and which in their turn contribute, together with the Uruguay River, to form the La Plata River, one of the greatest estuaries in the world.

The Paraná.—In volume the Paraná is a giant stream. It rises in the mountains of Goyaz, in Brazil, in latitude $16^{\circ} 30' S.$, and has a length of 2,043 miles from its source to its junction with the Uruguay. It is divided into four sections, as follows:

(1) From San Fernandino to Corrientes, 676 miles in length, 2,400 yards in width (average) and 90 feet in depth (average).

(2) From Corrientes to Iguazú, 492 miles in length, 1,500 yards average width and 70 feet average depth.

(3) From Iguazú to the Guayrá Falls, 210 miles in length and 1,200 yards average width.

(4) And from the Guayrá Falls to Goyaz, 665 miles in length and 1,500 yards average width.

The basin of the Paraná is separated from that of the Amazon by the central plateau which stretches from the Sierra de Espinasso to the Andes.

The Paraná River would be navigable throughout its entire length for vessels of the largest size if its upper waters were not closed to navigation by the cataracts of Urubupunga and Guayrá. It is navigable up to Corrientes all the year round, the current running 3 miles an hour and the fall averaging 4 inches to the mile. Between Corrientes and the Guayrá Falls it is navigable for small steamers. The Brazilian gunboat *Tacuray* is supposed to have reached, in 1874, the highest navigable point, at $24^{\circ} 30' S.$ This point is considered the limit of the navigation of the Paraná River from the ocean.

The frontier of Paraguay commences at the Guayrá Falls. These falls, situated in the midst of a desolate region, far from human habitation, and rendered almost inaccessible by virgin forests, rapids, and other obstacles, have been visited by very few, though they are said to form one of the grandest spectacles in the world. The volume of water which passes over them is twice that of Niagara. The falls are produced by the contraction of the river from a width of 4,470 yards into a narrow gorge of 65 yards, the waters making a plunge of 56 feet.

If the Guayrá Falls and the numerous tributaries of the Paraná River which during their course form several cataracts, the principal of which are the ones called Piraty, Itaimbi, Acaray, Monday, and Pirapitá, are considered from the standpoint of practical usefulness, it will be found that they are very important. They might be used at small cost and with great advantage in the development of various industries of the country, on account of the great motive power which they are capable of producing.

Señor Don José Segundo Decoud, ex-Secretary of Foreign Relations of Paraguay, in a speech which he delivered at Asunción in 1889, said in regard to this matter:

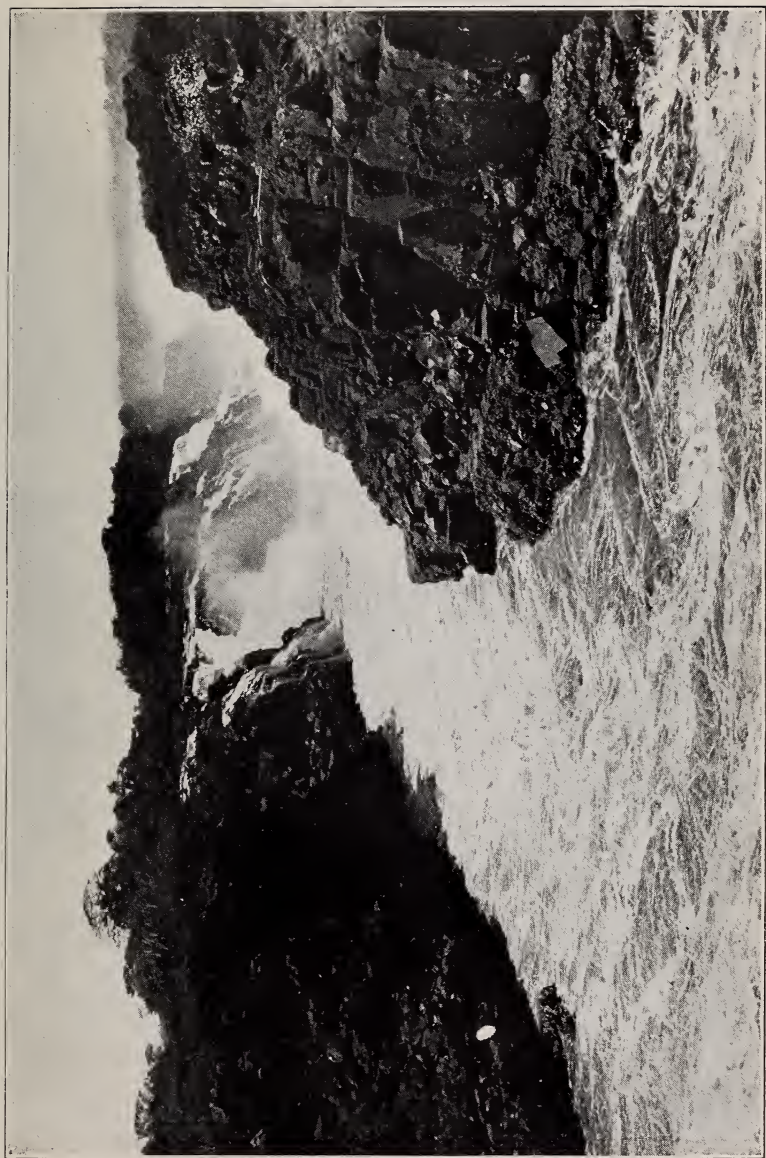
Few countries can be found on this continent so highly favored by nature as ours. Our secular forests abound in timber capable of being used in all kinds of industries, and of serving as fuel to produce electricity at moderate prices.

Technical studies made by competent engineers have shown that our charming and poetical Ipacaray Lake can be used as motive power for thousands of industries. Our waterfalls are numerous in all parts of our territory, but more especially in the rich and fertile regions of the Upper Paraná, where most of the streams form great and powerful cataracts. Our majestic and superb Guayrá Falls, emulating Niagara, are by themselves capable of generating power sufficient to move all the machinery of our future industries, and raise us to the rank of one of the first manufacturing countries in South America.

The principal affluents of the Paraná River within the limits of the Republic are the Acaray, the Monday, and the Tacuari, which are navigable in their upper part, and are very useful for the transportation of the yerba.

The Paraná River was explored in 1853 by a French vessel named *La Philomèle*, in 1854 by an English ship called *Vixen*, in 1855 by a French vessel called *Le Flambeau*, in 1863 by the *Water Witch*, an American vessel, and in 1864 by a French vessel called *Fulton*.

The Paraguay.—This river is in reality an affluent of the Paraná, but it is so much in the same manner as the Missouri River is an affluent of the Mississippi. It takes its rise in a chain of lakes called the Seven Lagoons, in Brazilian territory in latitude 13° 30' S., and longitude 59° 2' W. of Greenwich, and flows southward, with a swift undeviating current, until reaching El Paso de la Patria, where it makes its confluence with the Paraná, in latitude 27° 20' S., and longitude 58° 30' W. Its total length is about 1,800 miles. Its average



GUAIRÁ FALLS.



width within the Paraguayan territory is 500 meters. Its mean depth is 20 feet. The current runs 3 kilometers an hour, the fall being 10 inches per mile from its source to Asunción.

From Colonia de Bahía Negra to the mouth of Río Apa, which empties into it, the Paraguay runs southward between the Brazilian territory on its left bank and the Paraguayan Chaco on the right. At the mouth of the Apa, Brazil has established a colony, and on the opposite shore is a Paraguayan post of frontier surveillance, called Confluencia. Below the mouth of the Apa the navigation of the river becomes difficult, because of numerous reefs and sand bars. This portion of the river is described as extremely picturesque by Dr. E. de Bourgade la Dardye, the eminent French geographer and explorer, in his valuable work, *Le Paraguay*. Grand terraces of gray marble, honey-combed with deep grottoes, peopled by an infinitude of birds, such as one finds only in Paraguay, fringe the main channel of the stream or remain half hidden in the undergrowth of some abandoned arm of the river. Giant caeti and tree ferns cling to all the interstices of the rocks, relieving their ruggedness. In the distance lofty hills form the horizon. The trees at certain seasons of the year are covered by glorious flowers, some resembling enormous bouquets of violets, others presenting translucent masses of yellow and crimson and every conceivable tint set in the gray background of the marble rocks. It is one perpetual scene of enchantment, which commences at Itapucu and continues till the environs of the ancient city of San Salvador are reached.

A number of colonies are established in these regions. Some miles below San Salvador the banks become lower and the country resumes its monotonous features.

Near the point where the river Aquidaban (scene of the final overthrow and death of Lopez) opens into the Paraguay the port of Villa Concepción, one of the most important in Paraguay, is to be found. Below Concepción the river's banks are very high on the left and very low on the Chaco side. The coast for many miles was covered prior to the late disastrous war by rich "estancias," or cattle farms. They were all destroyed during that terrible struggle, but now they are being repopled and resuming their former prosperity. Numerous tributary rivers enter the Paraguay during its further course, one of which, appropriately named the "Confuso," after winding through innumerable detours in the Chaco country, pours into the Paraguay waters as salty as the ocean itself. Next comes the city of Asunción, the capital of the Republic, resting indolently on the green hills of Mangrullo and Recoleta. Here the left bank of the river is ridged with red sandstone, which at some points, as at Itapytapunta, overhangs nearly 90 feet the channel of the river. Close at hand is the green-crowned hill Lambaré. In the distance, winding silently

through the plains of the Chaco, is the mysterious and still unexplored Pilcomayo River, which forms the boundary between the Paraguayan and the Argentine Chacos.

Beyond Lambaré the river banks are dotted by a succession of pretty villages surrounded by orange groves and fertile bottom lands, from which a large quantity of fruit is exported by way of Buenos Ayres. Still farther down is the Fortress of Humaita, the last stronghold of Paraguay carried by the allied forces, and at the confluence of Las Tres Bocas, or Three Mouths, the Paraguay joins the Paraná.

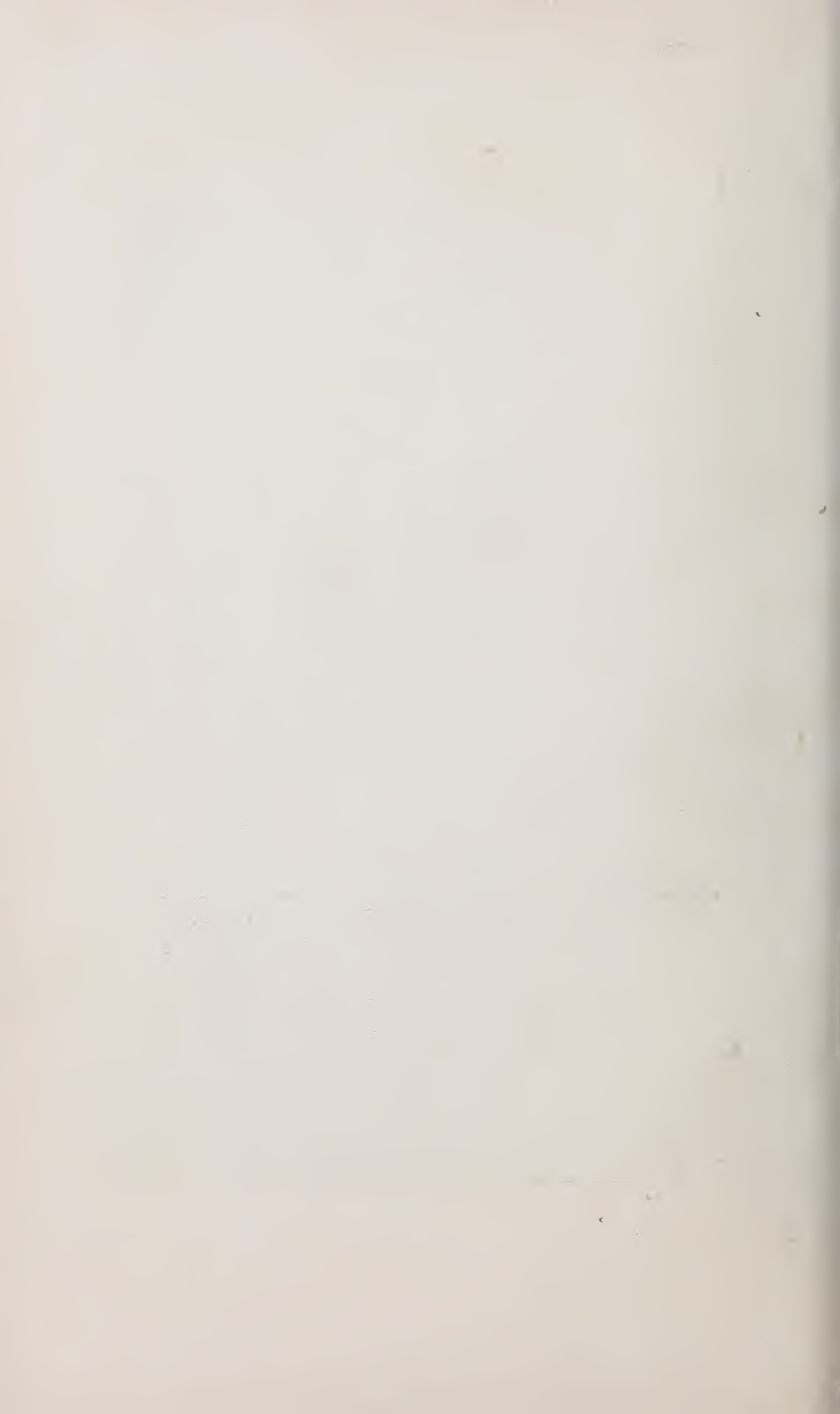
Two important affluents of the Paraguay are the Jejuy and the Tebicuary. Each of them in a country less opulent in navigable streams would rank in the first class. On the Jejuy is situated the excellent port of San Pedro. The Tebicuary, although navigable, is secondary in importance to the Jejuy. The other affluents are the Apa, the Aquidaban, the Ipane, the Manduvirá, the Piribebuy, and the Salado, generally navigable for small craft, and in the period of the freshets for steamers of small draft. Vast quantities of yerba maté are brought down these rivers in flat-bottomed boats.

The lakes of Paraguay are numerous. The most important is the Upua, 100 square miles in extent, and is drained by the Tebicuary.

On the Chaco side the principal tributary is the Pilcomayo, which has already been mentioned. This important river, which rises in Bolivia and falls into the Paraguay, forms the boundary line between the Paraguayan and the Argentine Chacos. It is, as has been said, almost unexplored. The only accurate information regarding its direction and character which so far has been obtained is due to the expeditions of Father Patiño, in 1791, and Lieutenant von Nivel, in 1844. Lower down on the same side the Bermejo River comes and empties into the Paraguay, after flowing a distance of 1,300 miles from its source in the highlands of Bolivia. Its course has been frequently explored and accurately determined. It is an extremely tortuous stream, but its depth is nowhere less than 5 feet. Both the Pilcomayo and the Bermejo rivers must some day be great highways of commerce and afford an outlet to the Atlantic seaboard for the rich natural resources of undeveloped Bolivia.



LAKE YPACARAY.



Chapter IV.

THE CLIMATE.

With reference to the climate of Paraguay, Señor Don Enrique Mangels, ex-Consul of Germany at Asunción, says:

The fact that Paraguay adjoins the Tropic of Capricorn might possibly suggest the idea that its climate is hot and dry, this being the case with most of the countries bordering upon either side of the tropics. On the northern side the deserts of Sahara, Arabia, Persia, Central Asia, Mexico, and Texas can be cited in support of this truth; on the southern, those of South Africa, Australia, Atacama, and some provinces of the Argentine Republic also show the same fact.

Fortunately, Paraguay is an exception to the rule. Its climate has nothing in common with that of the countries situated in the same latitude. Rain is abundant during the whole year, and in consequence, the soil being very fertile, vegetation is exuberant and luxuriant. The heat is less excessive than in a country whose soil is destitute of forests and grasses.

The following results about the climate of Paraguay have been obtained from daily observations during many years:

The mean temperature at Asunción varies between 22° C. (71.6° F.) and 23° C. (73.4° F.), and is therefore about the same as that of Santa Cruz de Tenerife, Cairo in Egypt, Hongkong in China, Caracas in Venezuela, and Tucumán in the Argentine Republic. The temperature in the interior of the country or in the mountainous part is from 2° C. (35.6° F.) to 5° C. (41° F.) cooler. The difference between the mean temperature in summer (from October to March) and in winter (from April to September), is approximately 6° C. (42.8° F.). The maximum of temperature observed at Asunción is 41° C. (105.8° F.), but there are many years in which it never exceeds 37° C. (98.6° F.). The minimum varies between 1° C. (33.8° F.) and 4° C. (39.2° F.), and in the country occasionally reaches zero. From this it will be seen that the thermometer in Paraguay never covers more than 41° C. (105.8° F.), and in many years much less.

A greater variation is observed in many other countries. In Montevideo, for instance, the temperature varies from 41° C. (105.8° F.) to -1.3° C. (29.56° F.), which makes a difference between the maximum and the minimum of 42.3° C. (108.14° F.). In Córdoba the extremes are 41° C. (105.8° F.) and -6.8° C. (19.76° F.), the difference being 47.8° C. (118.04° F.). In Melbourne the maximum is 44° C. (111.2° F.) and the minimum -2.8° C. (26.96° F.), the difference being 46.8° C. (116.24° F.). In St. Petersburg the maximum is 33.4° C. (92.12° F.) and the minimum -28.5° C. (-19.3° F.), the difference being 61.9° C. (143.42° F.). In Yakutsk, Siberia, the maximum is 33° C. (91.4° F.) and the minimum -54.8° C. (-66.64° F.), the difference being 87.8° C. (190.04° F.). The highest temperatures ever recorded in Paraguay are about the same as those usually prevailing along the coasts of the Mediterranean Sea and in the center of Europe. In the summer of 1892 it was observed that the thermometer was as high as 36° C. (96.8° F.) in the shade. In Africa and in

Asia there are places where the mercury reaches 50° C. (122° F.) during the day, and at night does not go lower than 35° C. (95° F.).

In view of these data it is necessary to admit that the climate of Paraguay can be considered temperate, the moderation of the heat being due to the frequent rain, the luxuriance of the vegetation which covers the soil, and the coolness of the southern winds which generally prevail.

Winter is sometimes cold, but the discomfort of the low temperature is never felt for more than about forty days. In the summer there are about one hundred days of excessive heat, the remaining two hundred and twenty-five days of the year being very pleasant.

The following statement shows the difference of temperatures between the coldest and hottest months of the year 1886:

Date.	Maximum.		Minimum.		Date.	Maximum.		Minimum.	
	Degrees Celsius.	Degrees Fahrenheit.	Degrees Celsius.	Degrees Fahrenheit.		Degrees Celsius.	Degrees Fahrenheit.	Degrees Celsius.	Degrees Fahrenheit.
Jan. 1	35.5	95.90	23	73.40	June 1	19	66.20	11	51.80
2	24.5	76.10	21	69.80	2	16.5	61.70	6.7	44.06
3	26	78.80	21.5	70.70	3	16.5	61.70	7.5	45.50
4	28.3	82.94	23.2	73.76	4	17	62.60	5.5	41.90
5	34	93.20	22.2	71.96	5	19	66.20	7.4	45.32
6	34.5	94.10	22	71.60	6	18.4	65.10	10.6	51.08
7	33	91.40	19	66.20	7	16.6	61.98	12	53.60
8	37.1	98.78	22	71.60	8	13.7	56.66	10.4	50.72
9	35.6	96.08	23.1	73.58	9	15.3	59.54	7.1	44.78
10	36	96.80	22.2	71.96	10	16	60.80	3.5	38.30
11	35.6	96.08	24	75.20	11	16.5	61.70	4.4	39.92
12	35.4	95.72	23.9	75.02	12	15.5	59.90	6.6	43.88
13	36.1	96.98	23.3	73.94	13	16	60.80	10.3	50.54
14	35	95	24.2	75.56	14	15	59	10.5	50.90
15	35.5	95.90	24	75.20	15	15.5	59.90	5.2	41.36
16	36	96.80	23.5	74.30	16	18	64.40	5.6	42.08
17	37	98.60	23.8	74.84	17	17	62.60	5.5	41.90
18	31.5	88.70	21.7	71.06	18	15.5	59.90	7	44.60
19	35	95	23.1	73.58	19	15.5	59.90	3	37.40
20	26	78.80	22	71.60	20	13.1	55.58	5.7	42.26
21	33	91.40	22.2	71.96	21	14.9	58.82	7.3	45.14
22	31.5	88.70	22.4	72.32	22	11.5	52.70	5	41
23	30.5	86.90	22.3	72.14	23	16.5	61.70	4	39.20
24	33.2	91.76	22.5	72.50	24	20	68	5.5	41.90
25	32.1	89.78	22	71.60	25	24	75.20	10.5	50.90
26	34.1	93.38	22.5	72.50	26	22.5	72.50	12.5	54.50
27	36	96.80	24.2	75.56	27	25.5	77.90	14	57.20
28	36.1	96.98	23	73.40	28	26	78.80	16.2	61.16
29	36	96.80	22.3	72.14	29	23.4	74.12	14.1	57.38
30	36.5	97.70	23	73.40	30	16.1	60.98	12.4	54.32
31	27.4	81.32	21.8	71.24					

Absolute maximum, 37.1° C. (98.78° F.).

Absolute minimum, 3° C. (37.40° F.).

NOTE.—The mean temperature in January, from three daily observations, was 27.4° C. (81.32° F.), and that of June, 12.9° C. (55.22° F.).

There have been some winters in which as many as sixteen frosts have occurred, while in others there have been no more than four, the average being ten, always occurring between May and September.

While it is true that these frosts do injury to certain tropical plants and render the cultivation of some of them difficult, it is also true that many of these plants, such as the coffee tree, the banana, the sugar cane, the pineapple, and many others, resist the action of the frosts to a great extent. On the other hand, these frosts were beneficial by preventing the growth of weeds during the winter and also killing a multitude of destructive insects.

Snow in Paraguay is entirely unknown, even in the highest mountains.

Hailstones of large size sometimes fall, but not frequently.

Strong windstorms generally accompany the rain during the summer, but are not so severe and injurious as on the seacoast and in the vicinity of the great mountains.

Lightning and thunder are often so severe that the whole of the sky seems to be on fire, the phenomenon being observed for several hours.

Fogs occur very rarely, especially on the plains, but dew is very abundant.

Droughts are very rare. During the twenty-three years preceding 1877 only one occurred, and that lasted nine months. This drought was not caused by an absolute lack of rain, but by the fact that the water which fell proved insufficient to compensate the loss caused by evaporation and filtration. The ordinary rainfall is 130 millimeters per month, and on this occasion was only from 40 to 60 millimeters; but as the country is crossed by a great number of important streams the volume of whose waters does not depend upon the rainfall, the drought did not cause as much damage as it otherwise would have occasioned. No cattle was lost for want of water or pasturage, and the injury done was merely to some crops.

During the seven months of the summer of 1877-78 (from September, 1877, to April, 1878) rain fell in great quantities. The fall at times reached the enormous quantity of 2,421 millimeters, and in some cases the fall of a single rain was 170 millimeters. The following statement shows the rainfall in millimeters at Asunción during the period of 1877-1891, excluding, however, the years 1884, 1887, and 1890.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1877.....	390	33	127	249	68	14	94	48	158	133	253	262	1,478
1878.....	386	610	182	445	63	80	76	145	101	185	201	139	2,613
1879.....	215	32	232	105	192	144	79	37	29	193	105	221	1,584
1880.....	126	130	321	37	200	64	109	131	49	168	158	81	1,574
1881.....	190	161	214	209	175	94	99	39	81	200	128	78	1,668
1882.....	148	77	213	56	157	232	93	12	37	147	77	208	1,457
1883.....	46	127	115	74	155	51	15	5	167	99	202	89	1,145
1885.....	97	51	53	251	288	23	58	76	193	42	25	185	1,342
1886.....	113	124	184	187	48	91	43	29	82	154	156	64	1,275
1888.....	48	63	135	125	74	31	16	106	164	204	102	140	1,208
1889.....	223	171	233	186	176	78	121	15	32	231	157	200	1,823
1891.....	122	100	269	164	11	123	36	24	91	192	54	172	1,358
Total	1,753	1,679	2,278	2,088	1,607	1,025	839	667	1,184	1,948	1,618	1,839	18,525
Average	146	140	190	174	134	85	70	56	99	162	135	153	1,544

NOTE.—For the purpose of rendering the above statement clear, round numbers have been used. In place of fractions from 0.5 to 0.9 millimeters whole numbers have been inserted, and those from 0.4 to 0.1 millimeters have been omitted.

From the preceding statement the following conclusions can be drawn:

First. During the twelve years of these observations not a single month has been without rain.

Second. The maximum of the rainfall in one month (February, 1878) was 610 millimeters, and the minimum (August, 1883) was 5 millimeters.

Third. The month in which the heaviest rains occurred was March, and the least in August. The average rainfall in March was 190 millimeters, and in August 56.

Fourth. The year of the heaviest rainfall (2,613 millimeters) was 1878; the least precipitation (1,145 millimeters) was in 1883.

Fifth. The average rainfall in twelve years was 1,544 millimeters.

Sixth. The order of the months according to the quantity of rainfall is as follows: March, 190 millimeters; April, 174; October, 162; December, 153; January, 146; February, 140; November, 135; May, 134; September, 99; June, 85; July, 70; August, 56.

There is a scarcity of rain only during four months of the winter, but the rainfall in all the other months of the year exceeds 130 millimeters.

During the year there are on an average 79 rainy days, 72 cloudy, and 214 clear.

From these facts it would appear that Paraguay, as far as rainfall is concerned, has been highly favored by nature. A rainfall of over $1\frac{1}{2}$ meters per year is a benefit which few subtropical countries are permitted to enjoy; and this benefit does not consist solely in the quantity of the water precipitated, but also in its convenient distribution during this period. The greatest rainfall in Paraguay occurs at a time when it is most urgently needed, while in some of the bordering countries the rains fall in winter, when they are not so much desired. On the other hand, in some places of the bordering territory, such as Matto Grosso, etc., there are no rains in winter. The rainfall at Montevideo, Buenos Ayres, and Córdoba is only about one-half that of Paraguay, and in Bahía Blanca it is only one-fourth. In Tucumán, which is precisely in the same latitude as Paraguay, the rainfall is a third less, and in some months of the year there is no precipitation.

The prevailing winds are from the north and the south, the former being warm and the latter cool. The northern winds come from the tropical interior of Brazil; the southern from the antarctic zone, and at times are very cold. These two winds regulate the climate of Paraguay. When the northern wind blows for some time the temperature rises in summer to 30° C., 35° C., and occasionally 41° C., and in winter to 26° C. The air then becomes heavy, very humid, and often after some moments of calm a storm comes from the south and brings with it a heavy rain. The southern wind is cool, vivifying, and causes the mercury to drop from 10 to 15 degrees. This in a short time clears the atmosphere, and sometimes frosts occur on clear winter nights. After prevailing for some days in succession the southern winds sometimes change to the east, and from the east to the north, but winds from the west are almost unknown. In recapitulation of the above statements, it may be said that although the Paraguayan winter renders the cultivation of some tropical plants difficult, it also facilitates the cultivation of others, such as vegetables and fruits of the temperate zone. Owing to the peculiar climate of Paraguay, the productions of the tropical and temperate zones can be grown on its soil both in winter and in summer, producing for the inhabitants a diversity of food which rarely is found in other countries. Wheat and barley grow side by side with the sugar cane and the coffee tree.

Owing to the frequent changes of the wind, the northern ones being replaced by the cooling and stimulating southern breezes, the European does not lose his accustomed vigor as he does in the countries which are essentially tropical and where he becomes enervated by the debilitating action of the climate.

Only three months in the year can properly be called warm, namely, December, January, and February, and sometimes March and November may be included in the group. All the other months are temperate, and some of them may properly be considered cool or cold. Taking everything into consideration it can be safely said that the climate of Paraguay offers every inducement to industrious people to secure the best possible results from the cultivation of the soil, and at the same time the country is one of the most pleasant and healthful in the world.

In regard to the salubrity of Paraguay, Mr. Frank D. Hill, in his Report above mentioned, says:

The climate, far from being unwholesome, as is the current opinion in the United States, is remarkable for its salubrity. Indeed, Paraguay enjoys a reputation as a sanitarium all over this part of South America. The hotels at Asunción have been crowded all winter with invalids from Buenos Ayres and Montevideo. Dr. Stewart, Surgeon-general of the Paraguayan army during the late war, and now British Vice-consul at Asunción, speaks as follows:

If the absence of the principal zymotic diseases—yellow fever, typhus and typhoid, cholera and dysentery, which are all more or less endemic, or appear epidemically in Brazil and in the River Plate—has any relation to climate, then that of Paraguay

is very highly favored, those diseases being almost unknown here. The only diseases which may be considered endemic in certain districts are goitre and *elephantiasis græcorum*. The former is popularly attributed to the water, and the latter, considered more or less contagious, has hitherto been unaccounted for. As for Europeans, they enjoy good health in Paraguay; but it is necessary for them to live temperately and to avoid too much exposure to the summer heat, although sunstroke is remarkably rare. I think natives suffer more from heat than Europeans. Vaccination is made compulsory by law, and there is no case of smallpox in the whole country at this moment. Before vaccination became obligatory smallpox made great ravages all over the country.

Mr. Washburn, after a residence of seven years in Paraguay, says that it is probably as healthy a country as any in the world. In this judgment I quite concur.

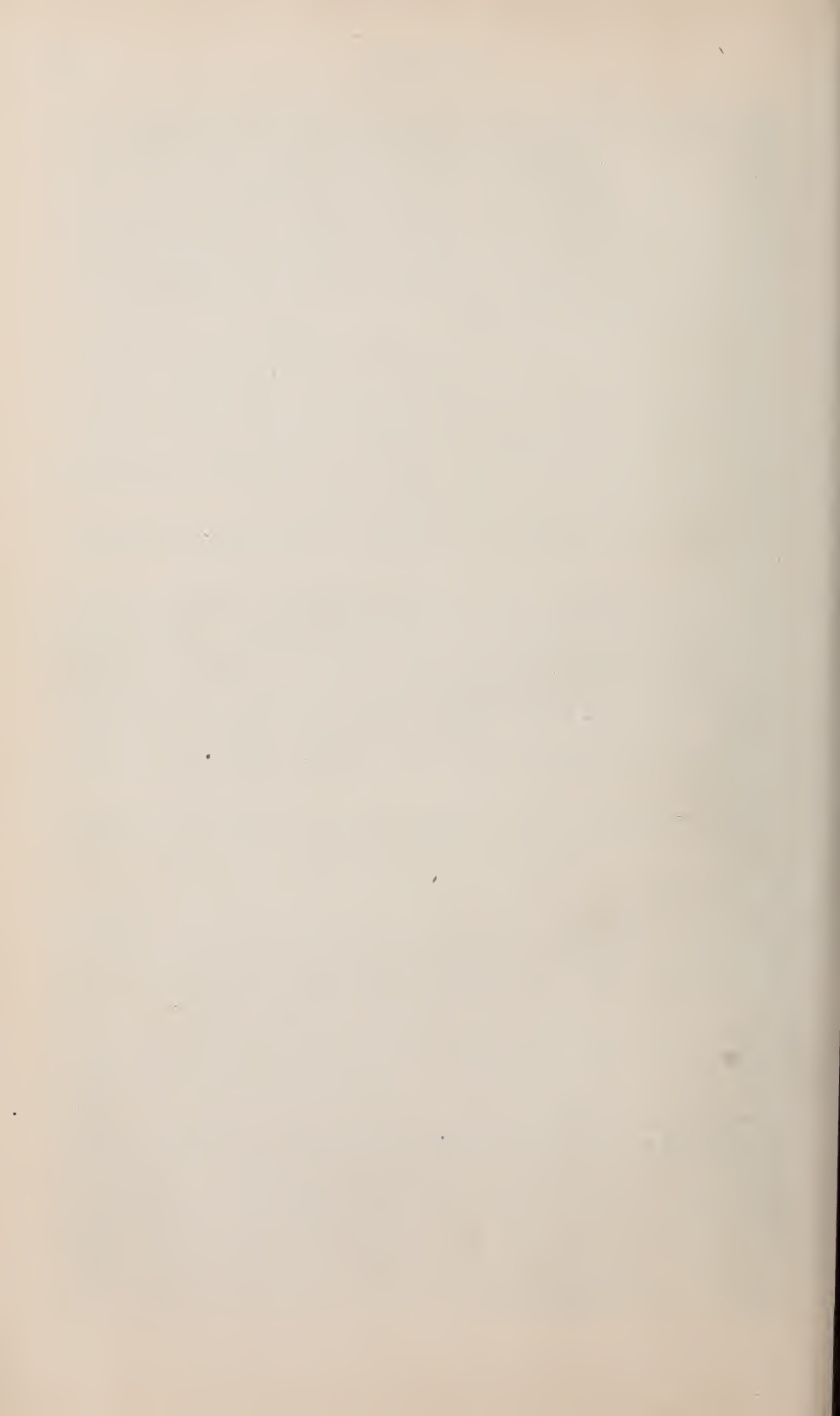
I have found it impossible to do anything in the way of vital statistics. The general impression prevails that the births of males far exceed those of females, and this must be so, inasmuch as the great preponderance of the female portion of the population, noted and commented upon by all observers just after the war, has almost entirely disappeared; and of the male portion of the population a large majority consists of young men born since the suspension of hostilities.

Mr. Ernest Van Bruyssel ("La République de Paraguay," Bruxelles, 1893) says:

The climate of Paraguay is both pleasant and healthful. Yellow fever, typhus, diphtheria, cholera, and dysentery are unknown in the country. In certain districts cases of goitre and elephantiasis occasionally present themselves. Paludial fevers are rare, though marshes and swamps abound. Europeans are sure to enjoy good health if they do not expose themselves too much in summer to the action of the sun. The natives suffer from intestinal troubles on account of the immoderate use of tobacco, and of their usual living almost exclusively on vegetables. The smallpox did great havoc among the natives when vaccination was not, as it is now, compulsory.

Another great authority on Paraguayan matters, Dr. E. De Bourgade La Dardye, a learned physician, who resided there for a long time, says the following:

In an article in the "Revue du Paraguay" (April, 1888) I have already expressed my conviction of the salubrity of the country. Except smallpox, which is diminishing since the introduction of vaccination, there are no epidemic disorders; neither is there any malaria, except in the almost uninhabited districts toward the east, where an intermittent fever called "chucho" is prevalent. Endemic complaints are hardly known, and the cases of phthisis that have come to my knowledge are very rare. On the other hand, rheumatic affections of various kinds, disorders of the blood and stomach, and anæmia are far from uncommon; these, however, may be mainly attributed to defective sanitary arrangements, or to the fact that the people sleep in drafts and are insufficiently clothed and badly fed; but I am certain that any European observing hygienic rules might be altogether free from alarm. I intend to publish the result of my own medical observations, and I believe that they will tend to substantiate the assertion that Paraguay offers a promising field for emigration, the climate being both temperate and healthful, a combination that is not always found. I shall be gratified if my representations prevent my fellow-countrymen from being daunted by the fate of those who have been pioneers in the way of discovery, and if I succeed in encouraging them in their resolution to persevere and open up fresh scenes for commerce and agriculture.



Chapter V.

HISTORICAL SKETCH.

Consul Hill says, very aptly:

In order to properly appreciate the present condition of Paraguay, the character of its institutions, and its future prospects, a cursory glance at its past is absolutely necessary. No nation has been more completely broken than, and none has so barely escaped utter extinction through the adverse fortunes of war as has this interesting Republic, and yet to-day, scarcely a score of years since the close of the late war * * * the country is on a firmer basis than ever before, and * * * can look to the future with complacency and some degree of confidence.

Nothing is known of the primitive inhabitants of Paraguay. Sebastian Cabot was the first white man who, in 1527, navigated the Paraná and the Paraguay rivers, going as far as the mouth of the Bermejo River in 1528, from where he returned to Spain. The first settlement in Paraguay was made in 1536 by a set of 300 Spanish colonists under the command of Juan de Ayolas, said settlement being a fort on what was supposed to be a route to the gold fields and silver rivers of Peru. This fort in the course of time became the city which is now the capital of the Republic, and was given the name of Asunción because the work for its construction began on the 15th of August, a day set apart by the Church for the commemoration of the Assumption of the Blessed Mother of Our Lord.

Ayolas having been killed by the Indians, was succeeded *pro tem.* by Capt. Martinez de Irala, one of his followers, and somewhat later, permanently, by Don Alvaro Nuñez Cabeça de Vaca, who reached Asunción in 1542.

Hernando Arias de Saavedra was the first native of the country ever intrusted there by Spain with supreme authority. This was in 1591. He believed that the policy of extermination, by war or otherwise, which thus far had been the only one adopted in regard to the native races, could, to the great advantage of all concerned, be set aside and replaced by one of moderation and fair treatment through religious influences. It was at his suggestion, in 1608, that King Philip III intrusted the Society of Jesus with the duty of carrying out the new policy.

The first Jesuits arriving in Asunción were Fathers Salonio, Field, Ortega, José Cataldino, and Simón Maceta. They landed at Asunción in 1609.

The influence of the Society of Jesus continued more or less unabated in Paraguay until the famous decree of King Charles III, issued in 1767, ordering the expulsion of all the members of that order from the dominions of Spain.

The invasion of Spain by the French, the abdication of Charles IV in favor of his son Ferdinand VII, the captivity of the latter, and the accession of Joseph Bonaparte to the throne of Spain caused in Paraguay the same effect as in the rest of Spanish America, and paved the way to its independence.

On the 14th of May, 1811, Pedro Juan Caballero, accompanied by a few men, attacked the barracks and took possession thereof without resistance of any kind on the part of the garrison. On the morning of the 15th he demanded Velazco, the Spanish Governor, not to make any opposition to his plans, to which demand Governor Velazco yielded in the end. A condition imposed upon him, which he accepted, was that he should associate himself with two citizens and divide with them his authority. The people adhered to the movement, and the revolution for independence was thus consummated.

The "Junta Gubernativa," or Governing Board, of Paraguay was organized as follows: Governor Velazco, Chairman, and Gaspar Rodriguez de Francia and Juan Valeriano Zeballos, members.

On the 9th of June Governor Velazco was deposed by the troops, and Rodriguez Francia and Zeballos remained in charge of the Government until the Congress met.

An Assembly of Paraguayan deputies, which inaugurated its sessions on the 11th of June, 1811, passed a resolution by which all allegiance to Spain was renounced, and a new "Junta Gubernativa," consisting of five members, who were Francisco Yegros, Gaspar de Francia, Pedro Juan Caballero, Francisco Javier Bogarin, and Fernando Mora was created. Yegros was made the President of this board and Mora the Secretary.

A subsequent Congress, whose first meeting was held on October 1, 1813, ratified this declaration of independence, resolved that Paraguay should thereafter be a Republic, devised and adopted for it a national flag, and vested the Government, or the executive branch thereof, in two Consuls, to be elected annually.

The first Consuls so elected (October 12, 1813) were Don José Gaspar Rodriguez Francia, a Doctor of theology, and Don Fulgencio Yegros. Difficulties having arisen between these functionaries, a new Congress decided (October, 1814) to make Dr. Francia Dictator for three years. Before the expiration of this term another Congress

(1816) proclaimed, by a decree, that Dr. Francia's dictatorship should be perpetual.

Upon the death of Dr. Francia, on September 20, 1840, a Provisional Government was created at Asunción, consisting of four military officers of high rank under the presidency of the Mayor (*Alcalde*) of Asunción, Don José Manuel Ortiz; but shortly afterwards (January 23, 1841) this board, or junta, was superseded by a triumvirate, which in its turn was abolished by order of Congress (March 12, 1841) and replaced by the old Consulate. The Consuls chosen were Don Carlos Antonio Lopez and Don Mariano Roque Alonzo. The latter was a soldier of high rank.

In 1844, at the expiration of the term of office of the two Consuls, the form of government was modified by Congress and a law was passed vesting the executive authority in a Chief magistrate under the title of "President of the Republic" and serving for ten years. Don Carlos Antonio Lopez, having been elected for this position, completed his term of office in 1854, and then he was reelected, first for three years and in 1857 for ten more. He died, however, on the 10th of September, 1862, and the Government fell into the hands of his son, Don Francisco Solano Lopez, at first as Acting President, and almost immediately afterwards (October 16, 1862), by an Act of Congress, as President of the Republic for ten years.

Upon the refusal by the Argentine Republic of the right of transit through her territory of certain troops, which were intended to operate against Brazil, the Paraguayan Congress issued (March 18, 1865) a declaration of war against the former country, and this brought about an alliance between Brazil, the Argentine Republic, and Uruguay, by whose action Paraguay was almost annihilated.

Lopez died on the field of battle on the 1st of March, 1870.

A committee of 21 prominent citizens undertook the reorganization of the country. The administration of the Government was temporarily intrusted to a triumvirate, consisting of Don Cirilo Antonio Rivarola, Don Carlos Loizaga, and Don José Diaz Bedoy. These gentlemen worked faithfully, and fulfilled their delicate mission to the satisfaction of all. The difficulties of their work had been rendered graver by the fact that the enemy had not yet evacuated the Paraguayan territory. The old electoral districts were reestablished as far as practicable, and a constitutional convention, consisting of 56 delegates elected by the people, was called to convene. This convention met on the 15th of August, 1870, and the Constitution which it framed and proclaimed on the 24th of November following is still in force.

Don Cirilo Antonio Rivarola was elected President under the new régime, and ever since the functions of the Executive have been suc-

cessively performed by Don Salvador Jovellanos, Don Juan Bautista Gill, who died while in office on April 12, 1877; Don Higinio Uriarte, who was called as Vice-President of the Republic to complete the term of President Gill; Don Cándido Bareiro; Gen. Don Bernardino Caballero; Gen. Don Patricio Escobar; Don Juan G. Gonzalez, elected November 25, 1890; Don Marcos Morinigo, who assumed the reins of the Government on June 9, 1894; Don Juan Bautista Egusquiza, elected November 25, 1894; Don Emilio Aceval, elected November 25, 1898; and Don Hector Carvallo, Vice-President, called by Congress to act as President on January 9, 1902, whose term of office will expire November 25, 1902, when his successor will be elected.

Chapter VI.

POPULATION, IMMIGRATION, AND COLONIZATION.

According to an official census, the accuracy of which has been occasionally disputed, the population of Paraguay in 1857 was 1,337,439 inhabitants. As the first census, taken in 1796, during the days of the Spanish rule, gave only 97,480 inhabitants, the conclusion has to be drawn that the increase of the population in that country during a period of eighty-two years, if the above figures are correct, was 1,239,959 inhabitants, or a little over 15,121 per year. This progress was stopped, however, by the disastrous war of 1865-1870, when Paraguay had to contend with the united forces of Brazil, the Argentine Republic, and the Republic of Uruguay, and sacrificed, in proportions never heard of before in modern times, the greatest part of her children. The census taken in 1873, perhaps exaggerated, as has been charged, but official, gave no more than 231,079 inhabitants for the whole country, out of whom only 28,746 were men, and no more than 106,254 women over 15 years of age.

In March, 1887, another official census, also said to be imperfect, was taken, and it gave a population of 329,645 inhabitants, without counting 60,000 semicivilized Indians, or the uncivilized ones, who are supposed to number 70 000, if not more.

Out of the said total of Paraguayans in 1886, 110,280 were men and 153,471 were women.

The census taken in 1899^a gave the following results:

Population:

Capital (Asunción), 51,719, out of whom 4,541 were foreigners.

Rural districts, 583,852, out of whom 13,642 were foreigners.

Total population 635,571

Foreign population 18,188

This population chiefly consists of the following:

(1) White people, descendants of the Spanish conquerors, or the offspring of their mixture with the native races and the immigrants who settled in the country during the last thirty years. The assimilation of these ethnical types has produced a handsome national type resembling the European.

^a Message of the President of the Republic of Paraguay to the honorable Congress of the Nation, April 1, 1901.

(2) Pure Indians, descendants of the original "Guaraníes," who inhabited the country at the time of the conquest. This element has also sustained material changes, owing to Christian influences, for more than three centuries and a half.

In 1865 there were negroes and mulattoes at Emboscada, Tabapy, and Aregui; but the negroes have now almost completely disappeared.

The only tribe of the Guaraní nation which still remains in a savage condition is that of the Caiguaés, which inhabit the northwest of the eastern part of the Republic.

The wild tribes known by the names of Mbayaes, Tobas, Lenguas, Chiriguano, Sanapanás, Angaites, Chamacocos, Guanaes, Machicuis, and Macaes, numbering about 100,000, inhabit El Chaco, or the western part of the country.

In Paraguay, no more nor less than in all the other States of Central and South America, the future of the country depends upon the increase of its population, and the possibility to take advantage thereby of the resources which nature with a prodigal hand has lavished upon its soil. Therefore it is not surprising that the efforts of the Government and individual patriotism always turn into that direction, and give the subjects of immigration and colonization the greatest preference.

The attention of the National Congress was strongly called to this fact in the Message which Señor Don Juan G. Gonzales, President of the Republic, transmitted to that body on the 1st of April, 1893. He said, among other things:

The current of immigration is weak, if compared with the advantages which the country offers and with our need of labor.

The number of immigrants arrived in 1892 was 1,723. Most of them were agriculturists, and many paid their fare. All have found at once remunerative work, but the greatest number have preferred to settle in the "colonies."

The development of immigration will always be slow, if the transportation of the immigrants from their own countries to the territory of the Republic is not paid by us. Immigration does not lose its voluntary character because the Government, at the request of the European immigrant, pays his fare. To expect from the workman, the agriculturist, or any other person belonging to the laboring class of Europe, who, pressed by the necessity of leaving his home, comes here and takes advantage of our most hospitable and liberal colonization laws, to look for work and in pursuit of welfare or fortune, to possess sufficient means to pay for his transportation to our soil, is to condemn ourselves to see immigration develop itself very slowly, and put off without reason the increase of the population and of the national wealth.

Rather than large numbers of immigrants we need that class which is useful to the country. And it is for this reason that the Minister of foreign relations decided in 1891 that free tickets should be furnished then and thereafter to all immigrants who should prove by certificates issued in their respective countries that they are agriculturists by occupation.

I believe that we must, as far as our resources may permit, promote immigration both by making new concessions and by incurring new expenses, and that we must not feel discouraged in the least for the little success which is said to have been obtained in the establishment of "colonies" and in our efforts to attract immigration.

We must remember that whatever is expended for this purpose, if expended honestly and intelligently, is in reality invested at rates of great profit for the future.

The appropriations made on the 5th of October ultimo enabled the Executive to support the "colonies" in existence, and to establish new ones in well-selected places and in close proximity to good means of communication, thus permitting the colonists to bring to the market easily and at small expense the products of their industry.

During the year 1892 the following "colonies" have been established, either by the Government or by private enterprise, namely: The Catorce de Mayo, a colony established at Villa Rica, where a large plantation of ramié has already been started; the Guillermo Tell, a colony on the Upper Paraná, established on public lands granted for this purpose by the Government to Dr. Moses Bertoni; the Santa Clara, a colony established in the province or department of Caazapa, * * * and the Nueva Australia, a colony established on a tract of land in the department of Caazapa and Mbocayaty, granted to the Australian Colonization Company. * * *

In regard to the "colonies" formerly established, I must say that they are flourishing and progressing daily.

Villa Hayes has acquired such conditions of life and self-support as to permit the Executive, in compliance with a provision of the colonization law, to create there a municipal corporation and an office of justice of the peace.

The President Gonzalez Colony astonishes the traveler for the degree of progress it has made in such a short time, thanks to the fertility of the soil and the special agricultural ability of its inhabitants. A village having already an active commerce has been established within its limits.

I have had occasion personally to contemplate in that place, yesterday a desert and now a flourishing colony, the gratifying spectacle of hundreds of European colonists of all races and nationalities living in peace and perfect harmony with the native element, accommodating themselves to our national habits and singing the national anthems upon the arrival there of the Chief Magistrate of the Republic. This gave me the greatest satisfaction, because I saw in it the fruitful germs of the future greatness of our country.

Let us convince ourselves that voluntary immigration will not reach the boundaries of our territory unless it is guided by the hand of the nation and attracted by liberal concessions.

Colonization by private enterprise will always follow the footsteps of the official, if the latter is successful.

These patriotic words of the President of the Republic merely reechoed the universal feeling of the country. The eagerness with which the Paraguayan people have undertaken the construction of great public works, especially railroads, and the concession to Europeans and other emigrants of almost untold facilities to come to Paraguay and take advantage of its wealth, are sufficient to prove it.

Great attention has also been paid to making the country known both in Europe and in America, as no one doubts that as soon as the capabilities of Paraguay are fully recognized in the European and other markets, ample means will be secured to undertake all kinds of useful works and to supply the country with all that is required for its progress.

The following are the advantages accorded to immigrants by the Government of Paraguay:

1. Free transportation from the ports of Buenos Ayres or Montevideo.
2. Entry free of duty of individual baggage, furniture, tools, seeds, and one gun for each immigrant.

3. Lodging and board for five days at the expense of the Government at the Immigration Hotel.

4. Free passage for the immigrant from Asunción to the place of destination, if on railway or river.

5. A grant of 16 squares of land to each immigrant at the nominal price of 15 cents per square, equal to about 8 cents per acre. If the immigrant is unmarried, he shall be granted only one-half of this land.

Nearly all the public lands were sold between 1885 and 1901. Those remaining unsold consist of small tracts suitable for agriculture. The Government has set apart portions of land in several parts of the Republic, to be used for colonization purposes.

DEMONSTRATIVE TABLES OF THE POPULATION OF PARAGUAY.

In No. 9 of the "Review of Paraguay," the following statistical study of the population of the Republic, based upon the census of 1899, was published.

Its conclusions, synthetically, are the following:

First. Density of population per square kilometer	1. 839
Second. Nationality:	
Paraguayans.....per 1,000..	968. 92
Foreigners.....do.....	31. 08
Third. Sex:	
Men	do.... 471. 29
Women	do.... 528. 71
Fourth. Civil state:	
Single.....do....	444. 20
Married	do.... 528. 40
Widowed.....do....	27. 40
Fifth. Instruction:	
Literate	do.... 369. 50
Illiterate	do.... 630. 50

This study was reprinted in the local press, and has been lately annotated and amplified with new data collected by the Government.

The following synopsis may be found of interest:

I.—DENSITY.

The population of the country it as follows:

Population, enumerated by names.

Capital of the Republic	51, 719
Rural districts	439, 000
	<hr/> 490, 719

Population estimated.

Population of Bahía Negra, Fuerte Olimpo, Government works, and private colonies of the western region (Chaco)	19, 852
Population of the Yerbales.....	25, 000
Indians.....	100, 000
	<hr/> 144, 852
Total	635, 571

It appears from these figures that the density of population in Paraguay is 2.01 per square kilometer or 0.61 per square kilometer more than in the Argentine Republic.

II.—NATIONALITY.

The population distributed by nationality is as follows:

Native population.

	Number.	Per cent.
Civilized	517, 285	80. 93
Indians, estimated	100, 000	16. 20
Total	617, 285	97. 13

Foreign population.

	Number.	Per cent.
European	6, 855	1. 07
American	11, 431	1. 80
	18, 286	2. 87
Total	635, 571	.....

Thus the total proportion of the foreign element is 28.70 per thousand.

The proportion of nationalities in the rural districts and in the capital is as follows:

	Natives.	Foreigners.	Total.
Capital	47, 075	4, 644	51, 719
Rural districts	570, 210	13, 642	583, 852
Total	617, 285	18, 286	635, 571

III.—SEX.

The total proportion of the sexes in the rural districts and in the capital is as follows:

	Rural districts.	Capital.	Total.
Males	206, 991	23, 174	230, 165
Females	232, 009	28, 545	260, 554
Total	439, 000	51, 719	490, 719

The proportion per thousand is as follows:

	Rural districts.	Capital.	Total.
Males	471. 29	448. 07	469. 03
Females	528. 71	551. 93	530. 97

The excess of the female sex in the total population as enumerated in the census is 61.94 per thousand (6.19 per cent).

The birth rate per thousand in the latest years is as follows:

	Capital.	Rural districts.	Total.
Males	506. 40	484. 80	485. 12
Females	493. 60	515. 20	514. 88

IV.—CIVIL STATE.

The figures referring to the civil state are as follows:

	Rural districts.	Capital.	Total.
Single	113, 939	18, 167	132, 106
Married	135, 566	6, 101	141, 667
Widowed.....	7, 050	1, 682	8, 732
Total	256, 555	25, 950	282, 505
Under age	182, 445	25, 769	208, 214
Total	439, 000	51, 719	490, 719

The proportion per thousand is the following:

	Rural districts.	Capital.	Total.
Single	444. 20	700. 06	467. 62
Married	528. 40	235. 13	501. 47
Widowed.....	27. 40	64. 81	30. 91

V.—EDUCATION.

The figures corresponding to the total population as enumerated are as follows:

	Rural districts.	Capital.	Total.
Literate	135, 219	26, 899	162, 118
Illiterate	230, 836	15, 916	286, 752
Total	366, 055	42, 815	408, 870
Less than 5 years of age	72, 944	6, 562	79, 507
Floating population		2, 342	2, 342
Total	439, 000	51, 719	490, 719

The total proportion per thousand is as follows:

	Rural districts.	Capital.	Total.
Literate	369. 40	628. 26	396. 52
Illiterate	630. 60	371. 74	603. 48

Population by nationalities.

	Rural districts.	Capital.	Total.
1. Paraguayans	425, 358	47, 075	472, 433
2. Argentines	8, 061	1, 274	9, 335
3. Italians	1, 502	1, 245	2, 747
4. Brazilians	1, 207	177	1, 384
5. Spaniards	428	718	1, 146
6. Germans	682	234	916
7. French	401	328	729
8. Uruguayans	384	220	604
9. English	383	60	443
10. Austrians	73	127	200
11. Swiss	112	86	198
12. Portuguese	62	61	123
13. Belgians	78	12	90
14. Chileans	62	16	78
15. Australians	47	-----	47
16. Hollanders	24	17	41
17. North Americans	19	18	37
18. Danes	31	5	36
19. Russians	14	13	27
20. Scotch	26	-----	26
21. Bolivians	11	10	21
22. Swedes	12	2	14
23. Arabs	12	-----	12
24. Greeks	5	4	9
25. Turks	2	6	8
26. Peruvians	-----	8	8
27. Irish	4	-----	4
28. Japanese	-----	1	1
29. Mexican	-----	1	1
30. Norwegian	-----	1	1
Total	439, 000	51, 719	490, 719

POPULATION BY NATIONALITIES IN THE CAPITAL BY DISTRICTS.

	Native.	Foreign.	Total.
Catedral	10, 534	1, 214	11, 748
Encarnación	10, 034	3, 002	13, 036
San Roque	12, 432	794	13, 226
Recoleta	2, 021	76	2, 097
Trinidad	5, 399	287	5, 686
Lambaré	3, 516	68	3, 584
Floating population	2, 141	201	2, 342
Total	46, 077	5, 642	51, 719

RECAPITULATION.

City	33, 000	5, 010	38, 010
Suburbs	10, 936	431	11, 367
Floating population	2, 141	201	2, 342
Total	46, 077	5, 642	51, 719

Native and foreign population by sexes.

RURAL DISTRICTS.

	Native.	Foreign.	Total.
Males	198, 327	8, 664	206, 991
Females	227, 031	4, 978	232, 009
Total	425, 358	13, 642	439, 000

CAPITAL.

Males	20, 196	2, 978	23, 174
Females	26, 879	1, 666	28, 545
Total	47, 075	4, 644	51, 719

POPULATION BY SEXES AT THE CAPITAL (BY DISTRICTS).

	Males.	Females.	Total.
Catedral	5, 277	6, 471	11, 748
Encarnación	6, 194	6, 842	13, 036
San Roque	5, 524	7, 702	13, 226
Recoleta	919	1, 178	2, 097
Trinidad	2, 524	3, 162	5, 686
Lambaré	1, 694	1, 890	3, 584
Floating population	1, 042	1, 300	2, 342
Total	23, 174	28, 545	51, 719

RECAPITULATION.

City	16, 995	21, 015	38, 010
Suburbs	5, 137	6, 230	11, 367
Floating population	1, 042	1, 300	2, 342
Total	23, 174	28, 545	51, 719

Proportion of sexes, by age.

RURAL DISTRICTS.

Age.	Males.	Females.	Total.	Males.	Females.
				<i>Per cent.</i>	<i>Per cent.</i>
0 to 5	35, 367	37, 578	72, 945	48. 48	51. 52
6 to 14	52, 269	57, 231	109, 500	48. 65	51. 35
15 to 17	20, 862	23, 045	43, 907	47. 72	52. 28
18 to 35	59, 112	63, 843	122, 955	48. 08	51. 92
36 to 45	21, 388	24, 128	45, 516	46. 99	53. 01
46 to 50	8, 307	10, 618	18, 925	44. 00	56. 00
51 to 60	5, 591	8, 604	14, 195	39. 38	60. 62
61 to 70	2, 395	3, 945	6, 340	37. 78	62. 22
71 to 80	1, 223	2, 011	3, 234	37. 82	62. 18
81 to 99	456	938	1, 394	32. 73	67. 27
100, etc	20	79	99	22. 47	77. 53
Total	206, 991	232, 009	439, 000	-----	-----

Proportion of sexes, by age—Continued.

CAPITAL.

Age.	Males.	Females.	Total.	Males.	Females.
				<i>Per cent.</i>	<i>Per cent.</i>
0 to 1.....	564	557	1,121	50.31	49.69
1 to 5.....	2,599	2,842	5,441	47.07	52.93
5 to 10.....	2,997	3,107	6,104	49.09	50.91
10 to 15.....	2,605	3,286	5,891	44.21	55.79
15 to 20.....	3,432	3,780	7,212	47.58	52.42
20 to 25.....	2,406	2,635	5,041	47.72	52.28
25 to 30.....	1,474	2,214	3,688	39.96	60.04
30 to 35.....	1,209	1,706	2,915	41.47	58.53
35 to 40.....	1,609	2,512	4,121	39.04	60.96
40 to 45.....	964	1,496	2,460	39.18	60.82
45 to 50.....	700	1,410	2,110	33.17	66.83
50 to 55.....	355	625	980	36.22	63.78
55 to 60.....	267	799	1,066	25.10	74.90
60 to 65.....	129	231	360	36.58	63.42
65 to 70.....	78	257	335	23.28	76.72
70 to 75.....	31	103	134	23.13	76.87
75 to 80.....	26	146	172	15.11	84.89
80 to 85.....	11	40	51	21.56	78.44
85 to 90.....	9	56	65	13.84	86.16
90 to 95.....	2	15	17	11.76	88.24
95 to 100.....		19	19		100.00
100 to 105.....		3	3		100.00
105 to 110.....		1	1		100.00
110 to 115.....		1	1		100.00
115 to 120.....		1	1		100.00
	21,467	27,842	49,309		
Not computed in the table.....			2,410		
Total.....			51,719		

RECAPITULATION BY PERIODS OF TIME ACCORDING TO AGE AND SEX.

Periods.	Capital.		Rural districts.		Total.	
	Males.	Females.	Males.	Females.	Males.	Females.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
Period of 1870-1900	46.20	53.80	48.23	51.77	48.12	51.88
Period of 1850-1870	39.30	60.70	45.50	54.50	44.94	55.06
Period of 1850	12.79	87.21	32.96	67.04	37.22	62.78
Averages	44.80	55.20	47.13	52.87	46.90	53.10

	Differences.		
	Capital.	Rural districts.	Total.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
Period of 1870-1900	7.60	3.54	3.76
Period of 1850-1870	21.40	9.00	10.12
Period of 1850	74.42	34.08	25.56
Averages	10.40	5.74	6.19

Proportion of sexes, by age—Continued.

POPULATION WITHIN THE AGE OF MILITARY SERVICE.

Rural districts:		
Native males from 18 to 35 years (in 1899).....	56,156	
Native males from 36 to 45 years (in 1899).....	19,838	
Native males from 46 to 50 years (in 1899).....	7,268	
	<u>83,262</u>	
Capital:		
Native males from 18 to 35 years (in 1900).....	5,583	
Native males from 36 to 45 years (in 1900).....	1,965	
Native males from 46 to 50 years (in 1900).....	469	
	<u>8,017</u>	
Total:		
Native males from 18 to 35 years.....	61,739	
Native males from 36 to 45 years.....	21,803	
Native males from 46 to 50 years.....	7,737	
	<u>91,279</u>	

The number of native males less than 18 years of age of the enumerated population is as follows:

	Capital (cen- sus 1900).	Rural dis- tricts (census 1899).	Total.
From 15 to 17 years	1,922	20,075	21,997
From 6 to 14 years	5,201	51,327	56,528
From 1 to 5 years	3,041	35,037	38,078
Total.....	10,164	106,439	116,603

Civil state.

RURAL DISTRICTS, EXCLUDING MINORS OF 14 YEARS.

	Native.	Foreign.
Males:		
Single	48,035	4,284
Married.....	62,484	2,899
Widowed	1,444	209
	<u>111,963</u>	<u>7,392</u>
Females:		
Single	59,546	2,074
Married.....	68,594	1,589
Widowed	5,106	291
	<u>133,246</u>	<u>3,954</u>
Total	245,209	11,346

Civil state—Continued.

RECAPITULATION.

	Native.	Foreign.	Total.
Males and females:			
Single	107, 581	6, 358	113, 939
Married	131, 078	4, 488	135, 566
Widowed	6, 550	500	7, 050
Total	245, 209	11, 346	256, 555
Under age			182, 445
Total enumerated			439, 000

CAPITAL.

	Native.	Foreign.
Males:		
Single	6, 160	1, 105
Married	2, 062	1, 018
Widowed	529	103
	8, 751	2, 226
Females:		
Single	10, 640	262
Married	2, 373	648
Widowed	945	105
	13, 958	1, 015
Total	22, 709	3, 241

RECAPITULATION.

	Native.	Foreign.	Total.
Males and females:			
Single	16, 800	1, 367	18, 167
Married	4, 435	1, 666	6, 101
Widowed	1, 474	208	1, 682
Total	22, 709	3, 241	25, 950
Under age			25, 769
Total enumerated			51, 719

Education.

RURAL DISTRICTS (EXCLUDING MINORS OF 5 YEARS).

	Native.	Foreign.
Literate:		
Males.....	67, 884	3, 544
Females.....	61, 945	1, 846
	129, 829	5, 390
Illiterate:		
Males.....	94, 409	4, 810
Females.....	128, 637	2, 980
	223, 046	7, 790
Total.....	352, 875	13, 180

RECAPITULATION.

	Literate.	Illiterate.	Total.
Males.....	71, 428	99, 219	170, 647
Females.....	63, 791	131, 617	195, 408
	135, 219	230, 836	366, 055
Minors of 5 years.....			72, 945
Total enumerated.....			439, 000

CAPITAL.

	Native.	Foreign.
Literate:		
Males.....	12, 276	2, 889
Females.....	11, 060	1, 274
	23, 336	3, 563
Illiterate:		
Males.....	4, 032	372
Females.....	11, 252	260
	15, 284	632
Total.....	38, 620	4, 195

RECAPITULATION.

	Literate.	Illiterate.	Total.
Males.....	14, 565	4, 404	18, 969
Females.....	12, 334	11, 512	23, 846
	26, 899	15, 916	42, 815
Minors of 5 years.....			6, 562
Floating population.....			2, 342
Total enumerated.....			51, 719

CONCLUSIONS.

The principal conclusions that may be drawn from these statistics are the following:

First. From 1870 to 1900 (thirty years after the war) the population of the country almost tripled itself.

Second. Nevertheless, there is an enormous difference between the present population and the number the country is capable of sustaining (68,900,000).

Third. This difference and the small proportion of foreign element (2.87 per cent) demands an increase in the immigration.

Fourth. The male and female population is being rapidly and progressively equalized, being nearly at par.

Fifth. The number of celibates is less than that of the married.

Sixth. The number of illiterates does not greatly exceed the number of literates.

Seventh. The population is predominantly native.

Eighth. The Indian population represents an insignificant minority of the whole.



Chapter VII.

NATIVE RACES.

By Dr. J. HAMPDEN PORTER.

Assuming it to be an established truth that in every country inhabited by primitive human beings those natural features the region possesses control their development, a first step toward ascertaining what these now practically extinct Paraguayan Indians east of the Paraguay River were, when first mentioned in Spanish Annals, demands some inquiry into climatic, physiographic, and other influences acting upon them. Recent political delimitations make this an inland state; but formerly peoples affiliated with its indigenous tribes roamed along the Atlantic provinces for long distances north and south of modern Paraguay. So far as the flora or fauna connect themselves with groups belonging to surrounding territories, Brazilian affinities predominate, though temperate latitudes soon arrested a southward extension of many important tropical species, and, generally considered, this land may be regarded as unique in respect of its animal forms, spontaneous vegetable productions, meteorological, hydrographic, and topographical phenomena.

Ethnological determinations, which have nothing to do with boundary lines, are yet somewhat complicated here by changes in these latter. Several groups were chorographically dismembered through shifts of frontier, and while studying anthropological traits geographical data can not be strictly adhered to. As a home for men who depended upon the natural endowments of their habitat almost exclusively, few provinces anywhere present greater advantages, and consequently there was, comparatively speaking, an unusually dense population, both nomadic and agricultural. Sedentary tribes found enough food to prevent any sensible diminution in numbers during prehistoric times, while wandering bands, encountering no physical barriers that prevented ingression or hampered movement after entrance, migrated into so desirable an area from all sides. As a result of its accessibility and of those waterways intersecting it throughout, together with the fact that no impassable deserts, mountains, or forests existed, isolation among aggregates became excep-

tional, and intermixture was nearly universal. Before examining the issues involved in location, however, a more precise mention of that environment to whose influences these tribes were exposed is necessary for appreciating conditions which either inured to their advantage or rendered nugatory such attempts at development as they initiated.

Although all Paraguay has about the same temperature, rainfall, river systems, soils, and proportion of sterile to arable lands, its eastern and western sections exhibit important contrasts that render them by no means equally desirable habitations for men who could effect very little change in their surroundings. Gran Chaco, lying west from the Paraguay River, is a prairie country, its woodland area being much less extensive than of Paraguayo Oriental. These plains have always been wastes, occupied by broken bands who took refuge there, and are conterminous with the Chiquitos plains, Pampas, and Patagonian deserts. There was more cultivable territory here, more food of all kinds than in Argentina or farther south; but natural supplies were insufficient to support numerous peoples, while no concentration could possibly take place without an artificial increase of productions dependent upon irrigation works far beyond reach of savages like these.

The Banda Oriental, however, is quite different from the Chaco undulations. Upheaval proceeded to a greater extent, and with subsequent erosion formed broken surfaces everywhere—valleys, hills, ravines—with more considerable heights, which represent an extension of the Sierra Amambay and Caaguaza. There are immense forests in this region, exceedingly large jungle growths owing to atmospheric humidity, with an exceptionally great number of specific vegetable forms. Indeed, the flora and fauna also in Paraguay proper, much surpass those of its transriverine province. So well fitted for human occupation was this territory in climate, soil, productions, and geographical features, that it supported an unusual population before Spanish invasion. Southward from that high, central plateau, which is formed by a prolonged and constricted part of Brazilian tablelands, lies what is called the Paraguayan Mesopotamia—at first an extensive alluvial tract between the Paraná and Paraguay rivers, but connecting with Chaco expanses, and ultimately widening into those vast champaigns which finally verge upon antarctic parallels. Spaniards translated the Greek expression for a land bordered by streams literally, calling this space *Entre Rios*. It is set with lakes—Neembucú, Spoa, Ipacarai—to a considerable extent forested, and likewise studded by enormous swamps, such as Estero Bellaco, Carubá, or Aquaraati, produced through overflows in that vast river system intersecting its entire expanse. These facts of themselves suffice to show how hopeless the prospect for improvement was among unevolved human beings situated in a country so cut up and drenched periodically with rain or flood waters.

What has been said thus far relates to those more important natural phenomena whose influence upon native races must have been most decisive; since apart from traits which may be referred to some primordial constitution of body and mind preserved through heredity, ethnic character merely expresses physical or psychical specializations organized during an intercourse with particular surroundings. Primarily, every aggregate is confronted by nature in some definite phase, and has the alternative of success or failure, continued existence or destruction, accordingly as it can adjust itself to external factors. Here, however, natural selection could not eliminate enough self-sustaining energy from unfit masses to make prolonged progress possible. There were "variations from an average" of disability, but they neither went on nor proved capable of resisting adverse circumstances. It now remains to examine the personnel of these aborigines and inquire into those vicissitudes to which they were exposed during historic times.

The present state of ethnological classification as illustrated by tribal groupings throughout South America is not an encouraging subject for contemplation, racial relationships all over this country being in an exemplary condition of confusion. Anthropometry and linguistics have both failed to supply data upon which any agreement concerning stocks or their offshoots could be arrived at. Nevertheless, Who inhabited Paraguay? is a question demanding attention, even while certain beforehand that no reply conveying positive information upon tribal affinities can be given. Forms of speech and special structural peculiarities have no necessary connection. Almost all those anatomical minutiae heretofore applied to identification among masses change with every shift of position, variation in social degree, or new intermixture, and since these peoples have been systematically subdivided with reference to both language and bodily conformations whose special features obviously depended upon contingencies which nobody knew anything about, the uncertainties above mentioned are not inexplicable.

That so-called Tupi-Guaranian family, said to be distributed over Brazil from its western border to the Atlantic and thence extending southward into Buenos Ayres, has been long recognized and is authenticated by Ehrenreich and Von den Steinen as one of four great Brazilian groups, including all the inextricably entangled indigenes occupying that region. Natives calling themselves Tupinambas—warriors of the Tupis—also live within this latter territory, but no associated tribes bearing their family name. That also disappears in Paraguay, which is said to be for the most part peopled by Guaranis, who are regarded as autochthonous there; De Quatrefages deriving Tupinambas from them, and likewise differentiating certain communities belonging to Brazil under the collective designation of Tupi-Caribs. This is another combination of the original Guaranis, and judging by what has been

done already, it looks like an accident that a number of groups were not united with this family in eastern Paraguay, where there were equally legitimate reasons for appending names to the dominant aggregate's title.

Technically, family is not used with equal strictness in anthropology and natural history; yet it always implies blood relationship and common resemblances between members of one stock. As a matter of fact, however, from the Mexican Gulf southward to Paraguay tribes strikingly unlike and obviously alien have been included within one or another theoretical group because their idioms corresponded, while throughout this area peoples indistinguishable physically, and not assignable to separate culture planes, are put into different families on the ground that they employ diverse vocabularies.^a It remains to see how far this method of ethnological classification has been applied in the country at present under consideration, and if the races of Paraguay are arranged upon similar principles.

Theoretically this region was inhabited throughout most of its extent by Guarani tribes, and what is written concerning them implies, or takes for granted, that they formed a natural group so connected through consanguinity as to constitute an actual family. It appears upon examination as if this view might be questioned. At all events its discussion will involve everything which relates to these natives. Padre Ruiz and Gonzalves Diaz in compiling their vocabularies began a work which philologists have carried on until there is no doubt that one of the South American stock languages was here spread among numerous communities. Such an admission, however, means just so much as those words convey and no more. The linguistic stem referred to is Guarani, which, being homologous with Brazilian Tupi, has been incorporated with the latter and erected into what Keane calls a "radically distinct linguistic group"^b—Tupi-Guaranian. He also suggests that ethnic arrangements resting on the presence of these allied idioms may prove misleading, because a lingua franca, often strangely regarded as an invention made by missionary priests, is widely disseminated in both countries, where it frequently supplants

^aCritically, race type may be only an ideal, and mankind always remain "in a state of becoming" (Plato); nevertheless, "ethnic groups" (Deniker) are realities, despite that an elaboration of secondary anatomical traits has discredited their importance and overlaid them with minute criteria which have no taxonomic value and will ultimately be abandoned. Much has been done toward simplifying the network formed by South American languages. Buschmann, Clemens R. Markham, and other philologists have resolved pseudostocks into idioms and cut down stems until they are about equal with those occupying North America. (Brinton.) These inquiries relate to questions of race, however, with which linguistics are not necessarily connected. If physical or mental similarities combine Tupis and Guaranis, it is undoubtedly true that Arawaks and Caribs, also with many other native subdivisions, are equally alike. Indeed, three of the four families in which all Brazilian aborigines have been merged, are usually indistinguishable. A Tupi-Guaranian family appears to be only an ethnological construction. Perhaps these remarks, though not irrelevant here, more particularly belonged to the chapter on Brazil, but space is limited, and anthropological matter must enter when an opportunity offers.

^bMan, Past and Present, Cambridge, 1899, p. 365.

their original speech and has led to tribal schemes entirely without foundation. Du Graty says, "Tupi is Guaraní a little altered."^a But this relationship implies no organic unity between peoples employing them, although tribes using the latter tongue, or that "lingua geral" before alluded to, are spoken of as if their interconnection were sufficiently proven by a language which Cabeza de Vaca regarded as "common to all peoples of this province."^b Now its pure-blooded Indians have practically disappeared, and Gran Chaco, that offered such poor results for colonization as to be yet incompletely explored, mostly contains wrecks of those native aggregates who survived foreign or domestic war, pestilence, hybridization, tyranny, and the consequences entailed by their own unfitness. These aborigines can only reveal themselves through records, and faulty as they are from omissions, prejudices, and ignorance, former observations may still throw some light upon earlier times, enabling us to see how Paraguayan indigines lived, what circumstances surrounded them, the appearance, culture, conduct, resemblances prevalent among men who have been much confused with each other through imperfect classifications.

Dominguez takes an extreme doctrinaire view of this population; in his ethnological map the word "Guaranis" is printed across all eastern Paraguay; moreover, he asserts that the "twenty-one tribes, who differed only in their habits or their arms or the nature of the country inhabited by them," all belonged to one family. Azara,^c however, counted more than fifty separate branches of this stock, while previous enumerations by Schmidt, De Vaca, Dobritzhoffer and others do not correspond. Taking recognized Guaranians, whose essential identity in physical traits and general character have been so frequently declared, these statements may now be compared with the opinions of observers formed at a period when they as yet retained more of their original characteristics. Cabeza de Vaca discriminates between Azares and other Indians, because the former were "men of great size and gigantic limbs." He also relates that a Gaycuru deputation, bearing proposals for submission to Spain, met him at Asunción and utterly repudiated the existence of any kinship with Azares, Guatatas, Naperus, Mayas, or Guaranis, protesting—in virtue of tribal traditions, most probably—that those peoples had always been aliens and hereditary foes. On the Paraguay River Ulrich Schmidt^d discovered "tall and erect" Timbus, Carios, Corondas, with "small, thick-set Zchmiaisch and Salnaishos, whose genealogy Dominguez says "can not even be guessed at." Not to multiply quotations on this point, early explorers found no such uniformity as is said to obtain, either

^a La Republique du Paraguay, Bruxelles, 1865.

^b Voyage to the River La Plata and Paraguay, Hakluyt Soc., London, 1891.

^c Voyages dans l'Amérique Méridionale, Paris, 1809.

^d Conquest of the river Plate, 1535-55. London, 1891.

in stature, chest girth, mass of bone, color, muscular development, bodily vigor, or cranial conformation. It should be mentioned, likewise, that while Schmidt, De Vaca, Peña, Hernando de Ribera, Dobritzhoffer, and, in our own day, Lozano^a pointed out structural peculiarities which attracted attention, none of these doubted that a single stock occupied the entire province.

Equally well marked contrasts of other orders are nevertheless recorded—discrepant social status, for example, and divergencies in those mental or moral qualities constituting what is called family character—a diagnostic indication valuable on account of its well-known persistence and because these undeviating attributes are perpetuated through heredity. Looking at Guarani “nations,” as Schmidt calls them, from a psychical or sociological point of view, we find no important resemblances among them other than may be ascribed to their common savagery. The relations of tribes to foreigners, for instance, were extremely unlike, and men who violated formal contracts from caprice, or broke them under passing impulses of resentment or avarice, certainly possessed dissimilar moral natures. If an occupancy of like culture planes evinces coordinate intellectual development, still mind in its emotional aspect—temperament, disposition, feeling—must have been different, since in no way can constancy and vacillation, honesty and fraud, a sense of obligation and utter irresponsibility, be attributed to the same aggregates as generic traits. Guaycurus kept faith inviolably; Carios massacred De Avilas’s forces while acting as allies; Xarayes sank into slavery without resistance; Mepanes, Abipons, Mocovis, with others, never submitted until war, alcohol, and pestilence put an end to their struggle for independence through proximate extinction. A mere glance at facts shows how Charlevoix^b and many earlier annalists misinterpreted native characteristics when they merged Paraguayan aborigines into one mass of treacherous, sensual, cowardly, and equally degraded beings. Again, some so-called Guaranians lived in palisaded and moated towns like those Carios built, where existence implied the organization of cooperative action, however crudely systematized, as well as an acceptance of restrictions imposed upon individual freedom by communal government in whatever phase this may have been established. Contrariwise, each Orefone or Xaraye household lived separately, its members not only rejecting any common authority, but also revolting against patriarchal rule; and where peoples similarly situated live, so to speak, side by side during ages, with the result of developing such incongruities as these, there is no use in maintaining their inherent identity in caliber or fitness.

Purely ethnographic distinctions between these tribes require con-

^a *Historia de la Conquista del Paraguay*, Buenos Aires, 1873.

^b *Histoire du Paraguay*, Paris, 1761.

sideration because it is customary to note such matters, and not that they have any anthropological importance except in so far as inventions, manufactures, and primitive arts, or manners, customs, and ceremonial observances may betoken positive states of intellectual development—witness to the progress toward adjustment with surroundings. Notoriously the same needs have generally originated like modes for meeting constant economic requirements, and supplying what universal feelings demand. Specifically identical arms, utensils, tools, garments, and personal decorations originated all over the world; so that inferences respecting race or family can not be rightly drawn from details in mechanical construction, utilitarian devices, dress, adornments, mythical conceptions, or ritualistic forms. Taking old chroniclers' statements as they connect themselves with what has been said concerning legitimate and spurious ethnical data, it appears possible to derive certain ideas not expressed in the text from what was said of that tribal congeries occupying Paraguay when the Spanish invasion occurred. Then and at all times, communities lived apart; were not grouped in any locality accordingly as they possessed military power, stores of food, those material appliances and the internal organization which indicate progress or its absence. Dominant pueblos, with an environment of tributary towns, seem to have left no indication that such centers ever existed, there is not a trace of any permanent Guarani league or confederacy. These peoples occasionally combined to carry out some purpose, however, as the attack upon Buenos Aires, for instance, when, says Schmidt, "twenty-three thousand" Quirandis, Charuas, and Timbus assembled. In all likelihood this is no more true than that he himself once encountered 15,000 Timbu warriors. Such forces, even supposing their numbers to have been possible, were wholly incapable of remaining united except for the briefest period. Despotic power, religious zeal, intense and general patriotism have sometimes kept undisciplined, ill-provided masses together, but nothing else has ever done so, and these were wanting here. Geographical features presided over a distribution of population. Alluvial lands skirting streams belonging to the Paraná-Paraguay riverine system were inhabited most thickly. Circumstances forced nearly all tribes into some kind of cultivation, and those rich bottoms would evidently make large returns for very little labor; therefore these fluvial tracts, or the rising ground above them which was rarely overflowed, contained all sorts of communities—hunters or fishermen, agriculturists, and Indians entirely dependent upon spontaneous productions, sedentary societies, with nomadic bands—while native groups, variously denominated, more sparsely peopled the northeastern sierras, and small hordes of nameless savages wandered through primeval forests, lived on shore lines, or occupied malarious lacustrine basins.

Such dissimilarities in situation and social state were accompanied by a variety of minor peculiarities, which, as they have been much dwelt upon, may be rapidly reviewed. If the accounts explorers gave were at all consistent, if these writers did not perpetually contradict themselves and disprove their own assertions, *a priori* reasoning would at once dispose of the question whether Paraguay was inhabited by kindred peoples. As this matter stands, however, priest and soldier alike insist that affiliated tribesmen made up its population, though in so far as arts, customs, fashions, or manifestations of disposition go no aggregates were ever more unlike. Even confining all evidence cited to communities catalogued among direct offshoots from the above-mentioned stock, we find only records of difference. What old annalists say about costume, for illustration, might well suggest an opinion to the effect that there were no tribal dresses and everyone wore what he pleased. An explanation of this indiscriminate array is found in the market places scattered all over Paraguay's most populous districts. Arms, feather work, dyestuffs, furs, utensils—indeed, everything these indigenes possessed, including their women—were bartered at those commercial centers, and most articles of use or ornament thus became generally diffused. On the other hand, certain fashions claimed many followers. Numerous tribes—Timbus, Guaycurus, Quirandis, Carondas, etc.—wore cotton, woollen, or cardas-fiber kilts; Xarayes scantily covered themselves with parrot-feather capes and bead aprons; Abipons or their Mepene relatives exhibited the utmost decency in attire; Carios, like several groups otherwise well provided, usually went stark naked. Skin embellishments also varied greatly. Antonio Correa describes Xarayes “painting themselves for ceremonies,” but tattooing was the common form which this kind of decoration assumed, and these markings, although probably identical among special subdivisions, differed with each community. They do not appear to have possessed any totemic significance, although Guarani Indians here, and the same so-called family in Brazil, without doubt imagined magic animals as progenitors; nevertheless such forms were not blazoned on them. A colored splotch on the face or breast, straight lines variously combined, without pictographic or emblematic significance, comprehend all Paraguayan tattoos. Scarifications appear to have been less popular, but labrets were almost universal, while Von Martins (substituting an ethnographic fact for a conclusion in anthropology) discriminated ethnically between Lenguas and surrounding aborigines on the basis of these lip ornaments alone.

It seems scarcely necessary to examine data from which deductions upon race questions can not be made. There are other observations recorded, however, that can by no means be considered irrelevant. Height, bulk, endurance, etc., have been mentioned as strikingly contrasted among tribal aggregates here, and additional ethnic traits—

appearing only through inheritance and dependent on physiological processes for change—likewise mark off indigenous groups from one another. Dobritzhoffer's sweeping assertion that Guarani Indians, or, in other words, all natives of this province, "approach a Mongolic type," being short, thick-set, broad-shouldered men, having round faces, "slightly oblique eyes," and "a yellow-brown skin,"^a is not only at variance with the general testimony of observers, but has been flatly contradicted by his own descriptions of tall, slender "European-looking" communities, whose complexions matched those of Spaniards or Portuguese. Physical characters and their mental correlates can not be set aside because they are incapable of expression in terms commending themselves to common acceptance, and usually degenerate into disputes about words. Admitting that humanity had a single Indo-Malaysian source, still great groups were formed during dispersion whose unlikeness of mind or body do not rest upon descriptive technicalities. The word "race" generalizes persistent dissimilarities and resemblances among men. Throughout America certain masses so united or separated are now regarded as coming from diverse stocks and opposite quarters of the world. Although ethnologists have not agreed upon those "least variable differences" which characterize "large divisions of mankind;"^b yet structural features which will only change under influences altering the entire man, such as special cranial types, may be accounted valid differentials between aggregates. "Though a skull *per se* is of very little importance,"^c and its anatomical analysis, so to speak, has no discoverable bearing upon racial affinities, distinctly contrasted heads, when common to masses of men, possess an undoubted classificatory significance. No advantages accrue through size or shape. These simply represent traits descending in one line by inheritance. Natural selection affects nothing disconnected from fitness; head contours merely reproduce like ancestral peculiarities while the blood remains unmixed.^d Seeing, then, that according to the best and latest authority^e Guarani are dolichocephalous, while Charruas have short skulls, grouping them together, as Dominguez and others do, actually stultifies anthropo-biology.

Considerable stress has been laid upon descriptions given by early explorers in the old "Gobernación de la Plata," because what they had

^a Description of the Abipones. London, 1745. Vol. 1, p. 306.

^b Brinton, Races and Peoples. New York, 1890.

^c Virchow, Anthropology during the Past Twenty Years. Berlin, 1890.

^d "Certain characteristics which constitute the principal differences of races do not readily pass into others" (Spix & Martins, Travel in Brazil, 1817). Cranial conformation is, however, "no distinctive mark of race in the individual, only in the mass" (Brinton, Races and Peoples, 1890). Craniology is not confined to human beings (Owen, History of Vertebrates, 1866), and heads change with altered circumstances of life both in men and brutes, but not until the organization has been profoundly modified. It is this invariability that gives its taxonomic value to type, but to the typical form alone, as index classifications hopelessly confound divisions of mankind (De Quatrefages, L'Espèce Humaine). No instance of an alteration in skull character has been known to occur without crossing.

^e Keane, Ethnology. Cambridge, 1896.

an opportunity of seeing soon disappeared. Whole tribes vanished, or their dismembered fragments lost the original collective designation, as Azara explains, by making additions which finally supplanted it. It would appear, however, that real extinction took place on a large scale. In 1749 Dobritzthoffer reports Chalchaquis, Malbalaes, Matares, Mogosnas, Orejones, Aquilotes, Palomos, Churumates, Ojotades, Tanos, and Quamalcas as being wholly extirpated or rapidly approaching dissolution. We also learn from contemporary or preceding travelers that those great forests between the Paraná and Uruguay, with river basins in various parts of Paraguay, were peopled with nameless savages concerning whom almost nothing is preserved. Father Martin^a of course included them among Guaranian groups; yet while insisting on that "docile * * * mild * * * loyal" nature characteristic of a family eminently disposed to become "good Christians," he describes hordes wandering along the Mondây-guazu and Acaray, as being "constantly intent upon a chase of men, whose flesh they infinitely prefer to that of any beast."^b Similarly with better known branches from this same stem, Payaguas were "atrocious pirates;" Guaycurus and Mbayas, "Indians of the savagest kind," who perpetually "laid waste the lands of Paraguay;" Yaros, Bohanes, Costeros, and Minoanes, "most barbarous heathens, * * * not to be converted." It might seem from the foregoing that there was no more likelihood of our gaining any better knowledge from books of these communities at large than there is that we may come to know about Ten Kate's and La Hitte's mysterious Callus or the pygmies of Gran Chaco mentioned by Andrés Lamas and Juan Techos. This is not altogether the case, however. Chronicles contain valuable information whose incompleteness in many respects, or its inaccuracies, can now be supplemented and corrected. Therefore, without reference to tribal classification, much that is important as displaying social phases prevalent among these indigenes may be extracted from the writings of those who saw them while they were yet comparatively unchanged.

Between 1600 and 1650 Spanish domination was established in the Paraguay of that period, and exterminations, such as for several reasons attended their presence, had not proceeded to any extent. At this time the country supported a large population in consequence of being more or less cultivated by most of its inhabitants. Nevertheless there is nothing to show that agriculture was developed beyond the simplest modes of tillage, and contemporary records depict sociological conditions under which large local aggregations were manifestly impossible. Those 12,000 Carondas, "all fit for war," whom Schmidt met while marching on Asunción, represented 60,000 indi-

^a Description of the Abipones, vol. 1, p. 128.

^b Ibid.

viduals belonging to this single tribe, an estimate altogether incredible and at variance with everything known concerning the densities of American populations anywhere or their means for self-support when concentrated. On this continent stored food, which is prerequisite for an assemblage in mass, implies a town. Many such places are referred to by chroniclers, but they never receive much notice, and were most probably insignificant constructions, resembling Iroquoian villages—communal dwellings, built within more or less effective defensive works. There was no extension of the pueblo system here; no leagues, nor any grouping indicative of mutual relations. Notwithstanding it has been held that the New World had no past except as represented by towns, this is not a fact with regard to South American countries east of the Andes, and Paraguay among others. These settlements left very few archæological remains. If they were to any degree foci of developmental activities, the changes did not go far enough to assume recognizable forms. We do not know what modifications, if any, sedentary life introduced into the organization of nomadic or seminomadic communities, and beyond adverting to their existence, or events which transpired there, annalists say nothing that reveals the internal state of definitely settled village societies. It is significant in this connection that when transportation by water was not practicable and considerable distances separated places where supplies could be obtained, the invaders, who seem to have been entirely incapable of providing for themselves, always suffered severely from privation. This fact, so often recorded, not only indicates the common proximity of towns, which enabled land journeys to be made despite accompanying hardships, but demonstrates how small and ill provisioned such settlements must have been. Expeditionary forces could always get Indian carriers, and if stores had existed, Spanish soldiers were not the men to march with empty stomachs. Moreover, garnered grain is wealth among primitive peoples, as Payne remarks;^a and its extent of accumulation anywhere measures the development which labor arrived at, shows how far those arts connected with agriculture progressed, and forms a standard for determining general sociological conditions. That these never approached the barbaric stage, however, appears to be settled by every kind of evidence bearing upon this subject (already referred to under somewhat different relations). An explanation of that status in progress which succeeded its first movements, viz, permanent settlement, regular tillage, intertribal commerce, and rudimentary attempts at bettering their artificial surroundings, may be found in the isolation of pueblos either cut off from each other by barren tracts or hostile neighbors, an entire absence of common interests, together with that constant flux or reflux accompanying internecine

^a History of the New World, called America. Oxford, 1899.

wars or predatory expeditions, which, by all accounts, went on continuously and to a large extent occasioned those disruptions, redistributions, and disappearances too frequently occurring for any establishment of more advanced evolutionary stages. Forays, both by land and water, took place upon a scale that has not met with adequate recognition considering the destructive results they involved—their inhibitory influence as regards progress of all kinds. Abipon raids, for example, occasioned incalculable damage over an area so wide that its extent bore no proportion to the forces operating. Dobritzhoffer says these nomads never could muster a thousand warriors, yet, before being conquered by Mocobis, these Indians went far toward checking everything attempted in southern Paraguay, whether natives or foreigners were the projectors. Like tribes, if not so formidable, harried land tracts and swept innumerable waterways with piratical flotillas which drove away less warlike peoples from fertile river banks where fisheries yielded an inexhaustible food supply and difficulties of cultivation sank to a minimum. The Archivo General de Indias fully prove how seriously this cause alone affected internal prosperity and well-being and show an incalculable damage by means of tribes in utter savagery aggressing against communities who produced something. More than two centuries after Spanish observers described naked, destitute, ill-armed Lenguas as mainly occupied with destruction and spoil, Captain Page saw those wholly unimproved marauders levying tribute at will upon native reservations that had been settled and Christianized for generations. Long before this noncultivating Azares, whom Schmidt calls “the best warriors that can be found, though not so good at fighting on land,”^a had driven most sedentary inhabitants away from those streams they infested. So also with Carios, Guaxarapos, Payaguas, etc.—simply destroyers who paralyzed or ruined the best part of Paraguay. It is an anomalous circumstance that military men persistently wrote about Indian armies and widespread conquests made by native forces, while their own designs were constantly thwarted because even small bodies of disciplined troops could not be kept together in this country. They did so, however, and questions of equipment and supply never seem to have suggested themselves. Nevertheless the tradition of Tupi-Guaranian, or Guarani campaigns, has come down from prehistoric times and is still credited. No one knows how it originated, but those facts which probably explain its continued existence are in sight. The extension of a single language over an immense area was taken for proof that those who spoke it were related; furthermore, that these tribes diffused themselves by force of arms, and therefore had an unquestionably “superior military organization.”^b No facts what-

^a Conquest of the River Plate, 1535-1555.

^b Payne, History of the New World. Oxford, 1899.

ever can be brought forward in favor of this latter assumption. Since palæolithic man arrived in South America its inhabitants have incessantly wandered and crossed, until autochthonous peoples or trophic centers now scarcely require serious mention; while so far as the alleged family relationship is concerned, no such physically connected group can be found. War parties desolated Paraguay, and did it effectually. There is not a trace of anything more formidable.

Those feelings of abhorrence excited by cannibalism have given it an undue prominence among signs indicating the general social state. Most testimony with regard to its prevalence here consists of blank affirmations or denials made by men disqualified as witnesses from their ignorance respecting the subject upon which they pronounced. These writers commonly look upon human instincts and acts in an inverted order, judge savage conduct by civilized standards, besides putting inference in place of observation. There is little doubt that man eating was customary with all races at some period. True savagery is a state wherein objections to human flesh on its own account have no place. But well-marked degrees of anthropophagy are known as accompanying different developmental phases. The interval between indiscriminate cannibalism and this practice, when it has become an accessory of sacrificial rites, shows that ages passed while this distinction was shaping itself under successive evolutionary conditions. Settled rituals and systematic beliefs associate themselves with anthropophagous observances which have assumed a religious character. They always belong to barbaric societies who have long left primitive cults behind, and in that symbolical form Tylor calls "god-eating,"^a are scattered among people so situated over nearly the whole world.

It is altogether improbable that men were formerly sacrificed in Paraguay or devoured ceremonially. Human beings were, however, eaten for other purposes than to satisfy hunger—brave enemies (as Schmidt records of the Cairos) because their courage and powers might be acquired by this means; near relatives who had died, in order that death might not cause a final separation. Those cannibalistic forest nomads Dobritzhoffer speaks of, no doubt ate men as they would any other animals; but pueblo people and cultivators can not have been reduced to the same straits except during famine, nor can De Vaca's unqualified accusation against Guarani tribes at large in respect of like practices be accepted. Manyama and Bangala man eating, such as Hinde^b or Bidwell^c saw on the Congo, is not certainly known to have prevailed among sedentary communities inhabiting this country, although many native peoples were undoubtedly anthropophagists to some extent.

^a Primitive Culture. London, 1879.

^b Fall of the Congo Arabs. London, 1897.

^c Five Years Among the Congo Cannibals. New York, 1890.

Whenever they were not fighting, these Indians traded industriously, frequenting market places and bartering everything that could be exchanged. A general distribution of commodities occurred throughout East Paraguay, whose inhabitants, although they lacked ability to profit much from those associations their commercial activity brought about, necessarily gained something—incentives toward industry, improved arts, more quickness of mind, and greater culture than would have been possible in complete isolation. At the same time, outward circumstances, combined with mental inaptness, forbade advance, confining all forms of progress to rudimentary states. So far as fitness of mind or body are connected with those qualities which entail success and failure, the patterns of their aprons, feather combinations, nose or ear rings, tattoos, fashions in arms and utensils, mean nothing. As illustrating forethought, an ability to attain ends by artificial means, a sense of beauty, inventive faculty, or choice among materials, all Paraguayan tribes occupy much the same plane. That they never got beyond employing wood or stone when iron and copper were available, at least to some extent; furthermore, that those groups in whose territories these existed made no use of them, is a profoundly significant fact if we consider how an intermingling through traffic so long continued and widely extended as to form a language, must have modified local peculiarities of every kind, produced some mental plasticity, and relaxed the well-known rigidity of custom in savagery. Faculty, not skill, was at fault here—the man, and not his environment. Spaniards absorbed in their search for gold and jewels did not look toward any other end than immediate enrichment. In 1749 Father Martin declared Paraguay to be without any precious stones or ores. By this time, however, natives had learned by bitter experience what iron could do. Silver and other metals coming from the West through Bolivia and found among these tribes when their conquerors came, might have enlightened them concerning the country's resources; but while it is altogether improbable that those remained entirely unknown, they could not have been appreciated. Comprehension, insight, inventiveness, even imitative ability, were lacking.

Scarcely anything beyond affirmations of their former existence is to be found in early Spanish writings which refer to those forest groups, or "hordes," as Dobritzhoffer calls them, who once hid themselves in immense woodland tracts. Jungle life everywhere is miserable, often bordering upon the lowest modes of existence that men endure, and has received sufficient attention when Tapuyos, Akroa, Capayos, or other Brazilian indigenes equally degraded with these nomad fishermen of Paraguay were reviewed.^a Arms commonly display the most deft and efficient mechanism primitive handicraftsmen can attain to, and

^a United States of Brazil, Washington, 1901, Chap. III.

there are notices of tribes here who only partially reached a stone age. Cabeza de Vaca describes some Guaranis as using two-handed wooden swords, unedged with any harder substance. Yopíru or Mbaya maces or war clubs—the former being missile weapons—have been frequently mentioned, besides reed knives, pointless arrows, and lances without heads. In a majority of instances, however, such hand arms or projectiles had shafts capped with flint, shell, or bone. Constructive details naturally varied somewhat. There were various methods for barbing, feathering, putting on points, shaping bows, etc., but no Indians of these communities could “send an arrow through a knight and his horse,” as Cieza de Leon, whose “testimony,” says Prescott, “is always good,” records that Panama warriors did. Mocobies, Lenguas, Abipons killed jaguars, shooting at short distances and often meeting with casualties themselves; yet, speaking generally, none of those tribes in question carried archery far toward perfection. If their weapons possessed sufficient strength, skill failed; range and precision did not go together. So far as accuracy is concerned, Father Martin states that marksmen in the Mbaevera forest “shot small birds flying,” but mastery of the bow requires more mind than these aborigines could bring to bear. Axes that would cut wood or hew off a wounded enemy’s feet were made from any kind of rock which might be brought to an edge by fracture along its cleavage planes and did not need grinding. Pestles, mortars, sinkers, scrapers, etc., were also stone implements, while those intended for cutting or piercing show that shell and bone frequently furnished materials to Paraguayans, who, as a rule, had poor clay and did not manufacture good pottery, very commonly using gourds in place of earthen vessels. They knew nothing about the beauty residing in form; proportion, composition, suggestiveness, did not enter into their conceptions of artistic representation or ornament. Whatever was gaudy pleased and impressed them. Therefore, the forests abundantly producing brilliant dyes and splendidly plumaged birds, many gala dresses shone with vivid hues, and all but a few anomalous savages, seemingly without any desire for display, decorated themselves or their garments so far as skin painting, tattoos, colored clothes, trinkets, and feathers permitted. Facial deformation by labrats was, perhaps, the most prevalent mode of illustrating that no true æsthetic feeling had developed itself among these tribes at large, and yet explorers notice Payagua arabesques, earthenware statuettes, and wood carvings which give proof of considerable advance in this direction, being copies from nature—not merely symbolical representations. Schmidt describes those people as nearly naked, noncultivating fishermen, Guaranis by descent, according to Dobritzhoffer’s classification and Dominguez’s modern ethnological map, but really unplaced racially. Etchings by European cave dwellers show how little economic situation has to do with artistic ability, while certain vases taken from Sambaquis in northern Brazil and western Argentina manifest its existence

as an endowment of a few among the numerous South American sub-groups. At all events, there is enough to make it plain that nascent faculty was blighted by causes which prevented general evolution. Payaguas are now extinct, but evidently they possessed powers and mental habitudes such as did not find an expression through ordinary ornamental arts, or the combination of manipulative dexterity with empirical science which enabled certain so-called Guarani Indians to achieve their most perfect mechanical works, namely, canoes fit for coasting voyages, while carrying forty or fifty men. Craft constructed as these must needs have been, evince a union of intellect, orderly, well-arranged experience, and manual facility, surpassing anything else they accomplished. Those "copper rods," worn in place of wooden, flint, or shell lip disks, can not be accounted for. Schmidt says he saw them. It is known that neither Payaguas nor any other indigenes here worked metals, while a whole clan scarcely got them, either directly or indirectly, from an Andean source, and succeeded in monopolizing those articles themselves. Like Father Martin's metallic plates, discovered in the Banda Oriental, these articles are unexplainable.

There was no property in severalty, no individualism or citizenship, throughout Paraguay; its societies rested on tribal organization and territorial possessions, while such ideas, feelings, customs, and religious beliefs as necessarily grow out of land ownership by separate men did not exist there. Communal systems, however, though generically alike, differ in degree of development, and their specific features also vary. The most marked social contrast displayed here was that between distinctly nomadic and permanently settled aggregates. Agriculturists living in communal houses and wanderers looking for food wherever spontaneous supplies presented themselves might belong to one type, but they could not otherwise be the same men. Unfortunately we have very little special knowledge concerning these Indians. Everything that can vitiate records acted upon chroniclers who once saw what change and death now conceal, and scientific inference, or those analogies universal history enables us to apply, will not go far toward the rehabilitation of a past which bequeathed scarcely anything to posterity.

Obviously relations subsisting between modes of life and character are reciprocal. One gathers from the cursory and imperfect accounts given by earlier explorers that there were fishing villages on Paraguayan streams whose inhabitants did not cultivate. Very commonly, however, townspeople depended to a large extent upon their crops, and therefore, besides regulations for clearing, planting, reaping, storing, and distributing grain, tillage cults, howsoever rude they may have been, assuredly arose. In some form, earth spirits, genii of the seasons, divinities presiding over quickening seeds and coming harvests, ruled in that unseen but intensely realized world which primitive fancies are always so much occupied with, and undeveloped human

beings everywhere imagine as enveloping "this visible diurnal sphere." Pueblo life there, even in its simpler phases, diverged widely from a roaming existence passed under mat shelter tents whose position was constantly changed. Nomads had their own myths and impersonations of supernatural powers, for savages are far more religious than civilized men; nevertheless, these latter originated under other circumstances and exercised unlike influences, in no way operating toward aggregation, or that consolidation of interests which is the primary condition for improvement.

Apart from both those classes above referred to, there is a group here equally anomalous socially with Payaguas, as viewed from an artistic standpoint. Cabeza de Vaca's statement that the Guaxarapos recognized no chiefs, is ambiguous and admits of more than one interpretation; but this is not the case with his remarks upon Juarus. These were permanently settled cultivators, yet apparently without any tribal organization or communal system; seemingly they had neither gens units nor the whole supposititiously consanguine mass of tribesmen as formal elements in their social composition. Like Araucanians, those natives lived separately, each household being entirely independent and exercising all governmental functions whatsoever. An absence of information stops inquiry at this exceptionable fact. Juarus have passed away, but whether comparatively rapid extinction was due to a lack of such personal qualities as kept up the protracted Araucan defense against foreign domination, or if with less courage, enterprise, constancy, and love for liberty, they succumbed to greater strains, can not now be determined.

Considerable differences in many respects must have been visible between people occupying open, straggling villages, whose dwellings consisted of sheds, grass huts, or wattle-and-daub houses that would accommodate several families, when such places were compared with compact, fortified towns, whose populations lived in close contact and on a higher plane. Neither priest nor soldier could see anything of this, however. Both mistook every settlement for a feudal burg, misapprehending the meaning, and giving wrong names to, whatever they beheld. True pueblos, nevertheless, convey positive implications. They imply an indubitable progress toward sociological results, which, though not attained, were closer at hand in these places than was the case anywhere else. Wherever throughout both Americas the pueblo stood it was more or less perfectly organized as a military democracy. Robertson^a inferred this from historical analogies, while Morgan^b and Bandelier^c demonstrated his conclusion. Speaking

^aHistory of the Discovery and Settlement of America.

^b"Homes and household life of the Indians," contributions to North American Ethnology, No. IX.

^c"Distribution and tenure of lands among the ancient Mexicans," Ann. Rep. of Peabody Museum, Cambridge, 1878; also "The social organization and mode of government of the ancient Mexicans," *ibid.*, 1880.

comparatively, settlements belonging to that class give an assurance of civilizing agencies already established. Municipalities, even while embryonic, only endured because those chaotic associations proper to hordes had passed through the more defined and complex phases of elementary tribal society and approached a state wherein irresponsible individual action was partially subordinated to rule by customs; that is, laws in process of formation, regulations antedating formal enactments, and which represented "the judgments on particular cases"^a given in councils whose members occupied their positions during popular approval. Moreover, town life signified that disaggregative tendencies were being checked through a vaguely recognized superiority of the whole body politic; further by cooperative action developing as social solidarity increased; likewise from spontaneously evolved systematizations of labor following upon an artificial basis for subsistence. It may be safely assumed that these germs of progress were at work in Paraguayan pueblos, but beyond this point darkness falls upon their history, and yet those sociological features indicated again suffice to show how dissimilar peoples living here must have been—how distinctly facts contradict theoretical uniformities in the race or races inhabiting this country.

Few statements about the religious ideas of these tribes can be made with any certainty. Even such as were most advanced could not have arrived at any conception of natural causation. All obscure phenomena were referred to preternatural agencies. No crop was planted without attempts at controlling spirits of earth and air through charms and incantations. Animism—a belief in an unseen presence associated with everything belonging to the outward world—begot its progeny of omens, oblations, penance, sacrifice, and, like it has done everywhere throughout human annals, originated rites, not artificially constructed, as Banier, Voss, and Creutzer imagined, but born from those perturbations experienced by mankind when confronted by the mysteries of life or death. There is, however, nothing which shows that fetish men and witch doctors approximated toward becoming priests, that any ecclesiastical order even remotely resembling servitors dedicated to greater gods, such as those of Mexico, Central America, or Peru, existed. Paraguay's crude, disconnected superstitions lay apart in a domain where incipient generalization and abstraction were incapable of forming doctrines or religious ideals. So far as nature worship is necessarily connected with agriculture among all primitive communities, these tribes no doubt practiced some cults of this class, yet Father Martin assures us that they had no good deities—an opinion undoubtedly colored by professional feeling. He knew the sun was quite generally regarded as a source of benign influences in La Plata, that

^aDwight, introduction to Sir Henry Maine's *History of Ancient Law*, p. XV.

Tobas and other natives slept with feet placed toward the east in order to be kept from straying into devious ways. Protective agencies naturally coexist with maleficent powers, though these may be fewer and less efficient; but as may be gathered from what has been said upon the general situation, life's more salient events were calculated to excite dismay and sorrow rather than gratitude or hope. It had always been so. No gods of mercy were conceivable by them, and when Dobritzhoffer said that those Indians only credited malignant spirits, this might well be true, for then the worst had come—foreign invasion—and there was no expectation of deliverance.

That abundance both in natural and cultivated foods which distinguished Paraguay enabled its natives to sustain injuries inflicted during all prehistoric times by internecine hostilities, and live longer under Spanish rule than would have been otherwise possible. As chronicles unanimously agree, there was enough to eat everywhere. Innumerable inroads into a fertile country filled with game and open upon all sides must have occurred, and apparently these unknown invaders provided for their wants as easily as Sococios or Chaneses, whose coming is recorded. We can only say of nomadic peoples that they lived perforce in comparatively small bands, managing to support themselves wherever they wandered, though doubtless suffering equally from scarcity brought on by improvidence and destitution occasioned through lack of supplies. Agricultural communities, according to the annalists, were exceptionally well placed. Machquerendas furnish a solitary instance where cultivators "had nothing to eat;" but these indigenes are mentioned as recent intruders upon Abipon and Azara hunting grounds, who, between constant fighting, incomplete settlement, or numerous causes which might have operated toward the same end, possessed little stored provision for this is what Schmidt evidently means. Speaking of Carios, who were slaughtered despite their friendly overtures, he says: "The country and people pleased us, as did the food also." De Vaca's men overate themselves and got ill in Guarani villages. Antonio Correa found "plenty of maize, by the grace of God," among Xaraye pueblos, and if Quirandis, Charcos, Guaragos, Orejones, etc., did not plant regularly they procured enough seeds, roots, tubers, besides animal matter, to maintain a quasi-sedentary existence. Hunger played no important part in depopulating the Banda Oriental until its tribes had been scattered or enslaved, and not then as actual famine, but rather through lessening increase, depreciating physical and mental energy, augmenting a liability to serious results from shock or disease. Whether any South American aggregates so far overcame the weaknesses residing in an unstable social equilibrium as to be capable of reconstituting themselves under favorable circumstances after dismemberment is unknowable. History makes it plain that those most

highly evolved did not do so. Opportunity proved adverse, and they evinced no powers which could change the course of events. Displacement without captivity ruined less developed masses, who never recovered their former status, but uniformly degenerated like the fugitives inhabiting Chaco, in many instances villagers and agriculturists whom new surroundings converted into nomadic hunters or fishermen.

As slaves these indigenes died out. Violence, disease, exhaustion, self-abandonment, says Dobritzhoffer, "filled all lands of the Guaranis with their graves." Those factors, occasioning so great a mortality among conquered peoples in tropical or subtropical America, have already been referred to at some length while describing the native races of Brazil, Chile, and Argentina; therefore it only needs mention that these implastic beings broke down under coercion—could not become accommodated to those multiform privations and restrictions slavery implies. Furthermore, that conspicuously active among other fatal influences at work on this continent, and here operating upon an unprecedented scale, was despair. Naturally insensible to physical pain, as natives of the New World undoubtedly are, it is otherwise with mental distress. Indians brood over their sorrows until they perish from an emotional paralysis of vital function, made possible by nutritive failure. Observers belonging to different nations and ages have watched this wasting away without grasping its full meaning—missionaries at "Guarani Reductions," together with laymen like Sebastián Lorente in Peru, Bates on the Upper Amazons, Im Thum among aborigines of Guiana. It is absurd to blame men for doing harm unconsciously, but a propaganda was instituted here that demands some attention. The question whether savages are ever transformed into properly so-called Christian men may be put aside as not directly connected with this inquiry; what does concern it, however, is the system itself; that disciplinary organization set in action, and its issues. So soon as an interest excited by novelty wore off, enforced routine—regular labor, unvarying devotional exercises, constant supervision, perpetual interference with impulses, which undeveloped human nature continually experiences—became intolerable and destructive; yet their "relations" show how priests at mission stations believed that revolts against this state of affairs must have been specially instigated through infernal emissaries, and also display a mournful surprise over the loss of life among people whom these good ecclesiastics honestly attempted to protect and improve.

Under such circumstances comparatively few missionary settlements attained any long-continued existence. Father Martin reports that 73 were abandoned in Chaco alone before the eighteenth century was half over, while those which persisted among the "Guarani Reductions" of eastern Paraguay held their inmates by force, until such as

were left after generations had passed became accustomed to their situation. J. P. and W. P. Robertson's criticisms on such establishments are evidently prompted by sectarian prejudice.^a Not "imbecility" or a "servile" spirit kept these Indians in subjection. All who could escape did so; but in time they lost the power of self-protection, could no longer live independently, and therefore remained where they were to become (as has been mentioned concerning Argentine stations) the tributaries of unreclaimed savages, or passive communities whose original character has been lost through intermixture with foreigners. Christianity never propagated itself among pure-blooded natives. At no time was this religion able to stand alone. It could not take root in that soil where its seeds had been planted. The aboriginal tribes of Paraguay who became converts have disappeared, and their remnants still wandering over Chaco wastes are now heathens. Men can not be remade on any plan however perfect. They can not be improved; but only offered an opportunity for improvement which leads to better things or remains practically inoperative precisely so far as their power or willingness to assimilate what is presented extends. This famous propaganda illustrates Montesquieu's maxim that no people really rise except through institutions which blend with innate qualities belonging to themselves. But a small part of conversion here was effected by love. In spreading the faith, as in every other direction enterprise took, these wretched Indians, Sir Arthur Helps remarks, were subjected to "each variety of form which oppression has ever taken,"^a and it killed them—that is all.

As previously said, topographical features determined the fitness or unadaptedness of districts for tillage, and consequently controlled existing distributions among indigenous populations, together with their respective social grades. River bottoms could be cultivated most successfully, and after these, those forest opens "within which," says Dobritzhoffer, "there is an amazing produce of maize, with other fruits and also tobacco." Perhaps corn was autochthonous here, or having been introduced at some remote prehistoric period, it subsequently formed a distinct variety of the original *Euchlena* grain. A doubtful origin does not affect its economic importance, however, and we may feel assured that whatever state Paraguayans were in when their Spanish conquerors arrived, this mainly depended upon its presence or absence. Other vegetable foods besides maize grew plentifully, although judging by what is known of agricultural methods among extant aborigines similarly situated, cultivation scarcely went further than an imperfect clearing, putting like plants together and irrigating the ground. "Three kinds of potatoes, very large and well-flavored," Father Martin remarks, with mandioca and peanuts were staple pro-

^a Letters on Paraguay, London, 1839.

^a The Spanish Conquest in America, London, 1873, Vol. III, p. 112.

ductions, but hardly anything has been recorded concerning the care bestowed upon maté, guava, yatai, cacao, etc. Mimosas, palms, and acacias furnished immense quantities of alimentary substances. Balanza found a large number of obscure shrubs yielding nutritious matters no doubt familiar to natives; edible seeds, roots, tubers, gums, nuts, saps, fruits, existed in abundance. De Candolle asserts that uncivilized men never utilize all those supplies which are available, but this country was as well stocked with comestibles as Brazil, while they were far more equably distributed and therefore effective. Dardye's list of food-producing plants, Azara's earlier compilation, in fact all the literature which has accumulated around this subject, leaves no doubt about those vegetable resources abounding here, and with direct aliments, these peoples either had or possessed materials for manufacturing many important accessory foods.^a Paraguay tea, was generally used, as also tobacco, acid juices, peppers, mandioca or other sauces, honey and palm wine; indeed an endless variety of chicas, that might be employed as appetizers, aids to digestion, and preventives of excessive retrograde change. Fortunately for them these Indians having no metallurgic knowledge and very little good potters' clay did not construct stills like numerous tribes on the Amazons, thus escaping the worst effects entailed by intemperance until Europeans came.

Their waters and hunting grounds seem to have contained more game than any others in South America. Crustaceæ, arthropods, fish, amphibians, filled streams and lakes. Forest birds aquatic forms of indigenous or migratory species, resorting to every kind of habitat the country afforded, were so numerous that in this respect Paraguay stands by itself.

Deer and tapirs, the peccary, capybara, bizcacha, monkey, bear, with a number of quadrupeds such as are not eaten by civilized

^aThe term food comprehends all substances by which energy and tissue material expended in vital activities of every kind can be reconstituted. Primarily, an ability to repair waste depends upon those force-giving and structure-building constituents that aliments contain; secondarily, on the extent to which these are appropriated during their reduction by digestive action. Dietetic values vary with several conditions. Faulty preparation leaves indigestible elements and often removes valuable parts of nutritives. Monotony in regimens causes them to become distasteful and consequently inefficient. Bad cooking acts detrimentally in both ways, besides rendering food insipid or positively disagreeable, thus making complete assimilation impossible, because without some gratification of taste reparative processes always remain imperfect. From civilization to savagery by much the larger part of mankind are more or less exposed to those disadvantages mentioned, and as circumstances can not be changed men have everywhere employed agents which mitigate the detrimental effects of malnutrition—give flavor, excite appetite, aid resolution, make smaller amounts equivalent with larger quantities, relieve those discomforts deprivation causes. Generally such devices originate undesignedly and are practiced throughout all social grades without being understood. Many accessory foods lead naturally to abuses, but as a matter of physiology and physiological chemistry, that tendency toward excess does not transfer them into the fields occupied by sentiment or doctrine. Tonics, savors, narcotics, stimulants, answer to nearly universal needs and do much more good than harm; as an actual fact their daily use enables incalculable numbers of people to live who otherwise could scarcely find support. Finally, stimulation of some kind initiates every function living bodies perform; no organ does its part without being excited. Moreover, stimulus is not always followed by morbid reaction, and the former very frequently becomes an obvious necessity when requirements of life can not be obtained. No doubt Paraguayan Indians died from intemperance, but there can be no question that their chicas were, upon the whole, beneficial.

peoples, prevented what Africans call "meat hunger" from afflicting these indigenes, who, besides the animals mentioned, appear to have domesticated certain species. Early chroniclers constantly make statements which can only mean that huanacos—an alpine group once much more widely spread along Andean highlands than it is now—had been brought from Bolivian heights and acclimated throughout the lower levels of Paraguay, as it was both in Chile and Peru. Their "fowls," however, "poultry like we have at home," as Spanish writers frequently say, was certainly derived from foreign sources—from the west or north, where Europeans made their first settlements—and if not thus procured, then these annalists mistook wing-tipped wild ducks and geese for domestic varieties.

Plenty of provision does not necessarily imply proper nourishment, however, and without that men can not be well, happy, or prosperous. Savages never live physiologically and never escape the penalties, mental and physical, attaching to malnutrition. While discussing the relations sustained by nutritive states to the structure and transitional stages of Brazilian, Argentine, or Chilean societies, so much as these nontechnical papers permit has been said concerning a function which underlies and controls all that human beings feel, think, and do. The production, accumulation, or distribution of food stuffs was sensibly affected by general conditions among different populations. Roughly dividing the inhabitants occupying this land into sedentary groups or nomadic tribes, these latter would live in comparative plenty and then suffer from want, as fish runs or bird flights varied, accordingly as animals made those uncertain movements characterizing nearly all species of every great natural game preserve. Pueblo Indians were exposed to other influences. They were brought together by the Parana-Paraguay system, on whose streams necessity kept them, and throughout an unusually well-peopled region, considering its social status, more turmoil, displacement, and destruction took place than could possibly have occurred if aboriginal aggregates had been less concentrated. No connections founded upon force, neighborly regard, mutual profit, or expediency are known to have strengthened such places, and it is evident that before foreign invasion caused universal ruin, savages constantly plunging about in fire and blood must needs inflict or endure misfortunes which for every reason entailed destitution. This always implied the dissolution of societies without any chance for recomposition—the factors upon which recuperative processes depend being absent. Additionally, faulty agriculture involves periodical distress everywhere, while those constants in savagery—want of foresight or self-control, with an invincible repugnance toward regular occupation—must have brought about a like result apart from war and seasonal vicissitudes. Privation was occasioned by many causes, but invariably men failed, sickened, and

died from it, either directly or indirectly, although during periods antedating European invasion, dissolution proceeded less rapidly than would have been the case had nature not provided their country so bountifully.

Certain observations upon Paraguayan aborigines still remain to be made—mainly disjointed statements of old annalists who seldom relate anything fully. Cranial deformation is one of these ethnographic details, a device for improving personal appearance in vogue all over this continent. Topinard^a refers to the contour here mechanically produced as cuniform (to use Gosse's words, "*Déformation cuneiforme couchée*"), like that distortion Im. Thurn^b describes among Guiana tribes, and Tylor^c points out the prevalence of in so-called "Tupi-Carib" communities inhabiting east Brazil. Porto Seguro^d likens the resultant shape to a bishop's miter—"Parecidas a mitras de bispos"—which was produced by antero-posterior compression, obviously caused intentionally, and not an accidental distortion following pressure upon heads incompletely ossified during infancy by cradle boards, slings, or basket cradles. Little precise information respecting this custom as it existed here can be obtained. It was abolished consequently upon an ex cathedra decision to the effect that American Indians were human beings, given by Paul III in 1537. Previously, those enormities they endured aroused protest from a strong party within the church, but remonstrances and denunciations met with a strange reply, namely, that these natives had no souls, and therefore those charges preferred, even when true, did not amount to more than venial transgressions. Finally Bishop Ortez in his famous memorial declared that all indigenous peoples of the New World "were as incapable as brute beasts," and ecclesiastical controversies thus excited ultimately produced His Holiness's brief. Being really men, it became sinful to change their natural shape, so head flattening ceased among inmates of mission stations, and we hear no more about the practice until modern ethnologists occupied themselves with its various styles. They have not shown that compression affected cerebral growth or mental capacity, nor has anthropology made any advance toward "detecting a definite connection between shape of the cranium, conformation of the face, and structure of the brain."^e In fact, as this subject stands, it is rather a matter of curiosity than scientific interest. Furthermore, Topinard's cuniform type should not be assigned to all the Guaranian group as at present recognized. Nothing can be less probable than aggregates, so unlike in other respects, combining

^a *Elements d'Anthropologie Generale.* Paris, 1885.

^b *Among the Indians of Guiana.* London, 1883.

^c *Anthropology.* N. Y., 1881.

^d *Historia Geral de Brazil.* Rio de Janeiro, 1878.

^e Vischow. *Entwicklung des Schädelgrundes.* Berlin, 1871.

to follow a single fashion; besides which many ancient crania present no sign of deformation.

There were elements attaching to societies here, issues from their developmental conditions, that could not fail to be injurious. A normal increase of population such as under favorable circumstances would have accompanied exceptional food resources, was checked by polygamy. It did not prevail, apparently, among some few indigenous subdivisions, yet generally a plurality of wives was the rule. Woman's position and treatment, though occasionally good considering she lived with savages, usually partook of those misfortunes which her sex suffers among primitive mankind, and this also, though in another way, tended toward infertility. Wherever the unmixed natives of tropical America are now found, their sexual relations are extremely loose. Average travelers lay stress upon ceremonial observances or tribal penalties intended to promote morality; but prohibitive measures, as everywhere, accomplished nothing effectual, fell into disuse, were evaded, came to naught, like ordinances opposed by public feeling always do. These aborigines are much the same in this respect now as formerly. They did not need to acquire natural vices from white men. That baseless generalization which makes the whole American race cold and continent may be disproved by observation in any province from Costa Rica to Buenos Ayres. On the other hand, Paraguay was comparatively free from infanticide, and Father Martin praises Guaranis for not employing preventive means which often proved fatal to both mother and child among other Indians. An explanation of that superior virtue is, however, obvious—scarcity did not urge them toward this crime; they could feed a numerous offspring. Enough is known concerning the characteristics of undeveloped minds to make it plain that intemperance here must have been very common and its degenerative or actually pathological results felt severely. When honey wine has nearly depopulated whole districts in northeastern Africa, Paraguayans, with this liquor besides a superfluity of other intoxicants, were not likely to live soberly seeing they had neither the brain function nor mental organization essential to self-restraint. Missionary priests deplore and condemn their excesses, not being aware that these occurred inevitably. Nevertheless it needs inordinate quantities of chicha to cause alcoholism, and drunkenness therefore scarcely produced its worst effects before imported spirits could be bartered for at every trading station, and rum, with the process of manufacture, had become familiar to those natives who worked on sugar-making estates. A knowledge of distillation, with ready-made liquor easily procurable, notably accelerated downfall; they wasted health, strength, substance, in temporary excitement or transient forgetfulness, and drank themselves to death by thousands.

Old Paraguay had been peopled from Quaternary times until the sixteenth century without getting beyond rudimentary village communes; then its native populations speedily vanished, leaving few traces behind. Humanity does not invariably progress; never, indeed, despite inimical influences, and when greatness in a race is not imminent. Even an outline of prevailing conditions would seem to convey the assurance that they could not have issued otherwise than in those disasters which befell this country during pre-Columbian eras and after Spanish invasion.

Chapter VIII.

CONSTITUTION AND GOVERNMENT.

Since the 24th of November, 1870, Paraguay has had a constitutional government, republican in form. How, by whom, and under what circumstances this constitution was framed has been properly stated in Chapter V of this Handbook (see p. 25).

The instrument declares Paraguay to be a Republic, and following the example of the United States of America vests the powers of the Government in three coordinate, coequal, and independent branches or departments called, respectively, legislative, executive, and judicial. It recognizes the principle that the sovereignty resides in the people and that it is delegated by it to the authorities; but it also declares that the people itself does not rule, or can lawfully attempt to do the business of the government, except through their properly elected representatives and the regularly constituted authorities.

The legislative power is vested in an Assembly called National Congress, which meets at Asunción every year, and consists of a Senate and a Chamber of Deputies. Both Senators and Deputies are elected by the people, by universal suffrage, in the proportion of 1 Senator for each 12,000 inhabitants and 1 Deputy for each 6,000.

The Senators are elected for six years and can be reelected, but one-third of their number has to retire every two years.

The Deputies are elected for four years, but half of their number must retire every two years.

Measures affecting taxation are to be originated in the House of Deputies.

The executive power is vested in the President. In case of death or inability of the President the Vice-President, who is *ex officio* the President of the Senate, shall act in his place.

The President and the Vice-President are elected for four years, by an electoral college, and can not be reelected except after an interval of eight consecutive years.

The President is assisted in the exercise of his functions by a Cabinet (Ministerio) consisting of five ministers, whose official titles are as follows: Ministro de Relaciones Exteriores (secretary of foreign rela-

tions),^a Ministro de Hacienda (secretary of the treasury), Ministro de Justicia, Culto é Instrucción Pública (secretary of justice, worship, and public instruction), Ministro del Interior (secretary of the interior), and Ministro de Guerra y Marina (secretary of war and the navy).

The principle of ministerial responsibility is recognized by the constitution.

Subordinate executive authority is vested respectively in the prefects of the districts and their subalterns.

The judicial power is vested in a Supreme Court of Justice, sitting at Asunción, and consisting of one Chief Justice and two Associate Justices. It is a Court of last resort, and is intrusted also with the duty, political in its character, as is the case in the United States of America, of passing upon the constitutionality of any law or matter brought to its attention in judicial shape. Dr. E. de Bourgade de La Dardye says that one of the glories of the judicial authority in South America is that the said authority has always been maintained in its full dignity and independence, and that even in those countries in which the power of a dictator, or any other kind of autocracy, has prevailed for a time it has effectually resisted arbitrary demands.

A high officer, called "Fiscal General del Estado," whose functions in many respects are analogous to those of the Attorney-General of the United States, is the legal adviser of the Government and the representative of the fiscal interests. He is also the head of the prosecuting attorneys of the Republic, and has to have intervention in all cases affecting the Government, as provided by the laws on the subject.

In addition to the Supreme Court of the Republic there is a Court of appeals for civil cases and another for criminal and commercial cases. These courts are called *Cámaras de apelación*. There is also a Criminal Court (*Tribunal de jurados*), several Police Courts (*Juzgados correccionales*), Civil Courts (*Juzgados de primera instancia*), and Justices of the peace.

The Courts alone can take cognizance of matters admitting of judicial controversy. Their jurisdiction is original and exclusive.

Judicial action can be taken before the Courts against measures of the executive in the cases and in the manner and form prescribed by law.

The full text of the Paraguayan Constitution is printed in Appendix No. 1.

The Civil as well as the Commercial Codes of the Argentine Republic, with certain changes and amendments, are in force in Paraguay. Their provisions are founded substantially on the principles of the Civil Roman law.

There is a Penal Code and a Rural Code and a Code of military law, and several statutes regulating in the proper manner all branches of

^a All matters pertaining to colonization have been put in charge of this department.

the public administration. All these laws have been collected and published by authority of the Government.

The Paraguayan Army, comprising infantry, cavalry, and artillery, consists at present of 1,500 men.

In addition to this force, there is a National Guard which may be called out in any emergency. Every Paraguayan between the ages of 20 and 50 is bound to serve.

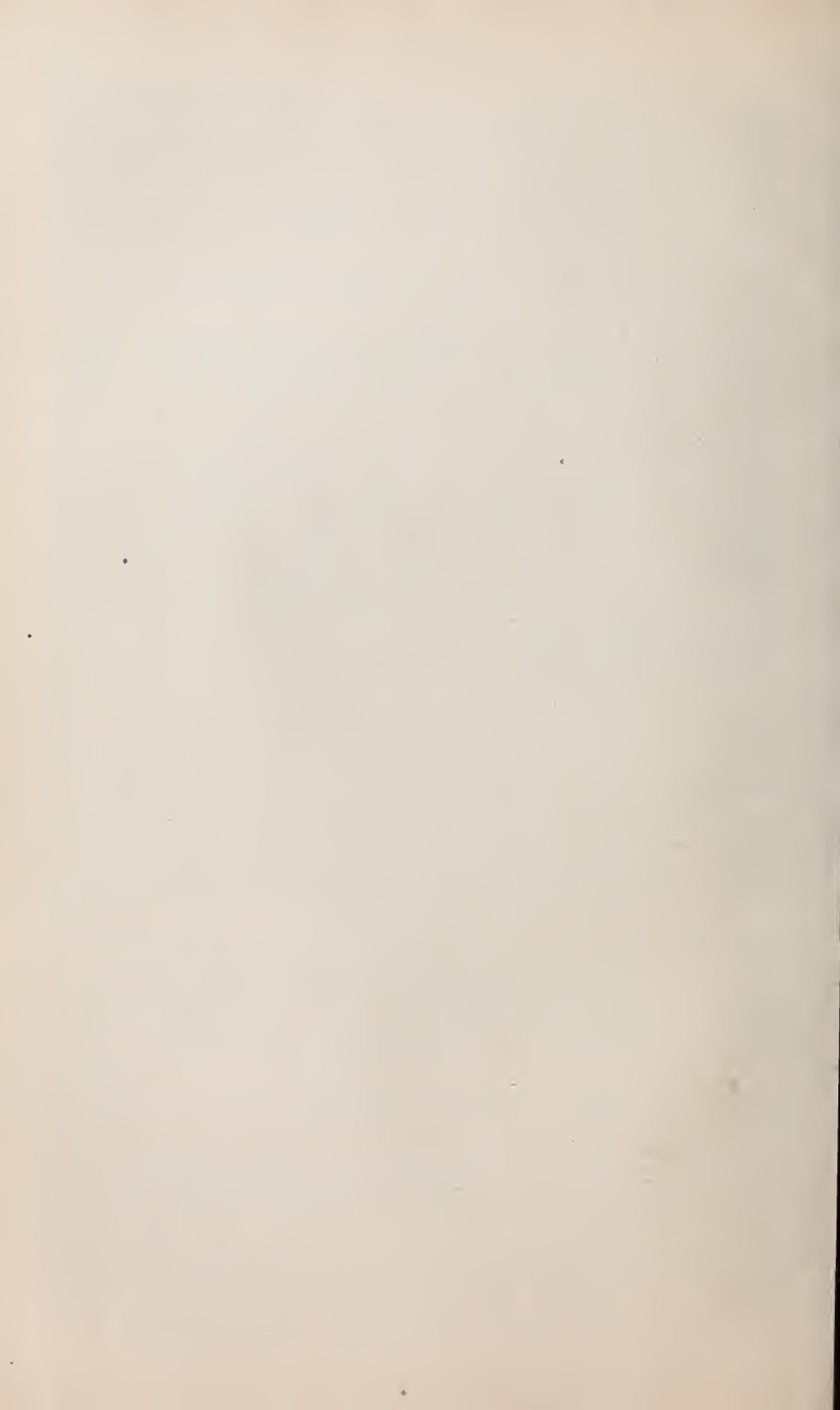
The Paraguayan Navy consists, at the present time, of small steamships doing police and revenue service.

Paraguay is diplomatically represented by Envoys Extraordinary and Ministers Plenipotentiary at Buenos Ayres, Rio de Janeiro, Montevideo, and Paris. The Minister at Paris is also accredited to London and Madrid.

In all other countries the Republic has Consuls-General and Consuls.

The United States of America, the Argentine Republic, Brazil, France, Great Britain, Italy, Austria-Hungary, Switzerland, Belgium, Spain, Germany, and the Netherlands have accredited representatives near the Government of Paraguay. The respective residences of these Ministers are as follows: The United States Minister, Montevideo; the Argentine, Brazilian, and French Ministers, Asunción; all the others, Buenos Ayres.

There are Consuls of all nations in Paraguay.



Chapter IX.

POLITICAL DIVISIONS, DEPARTMENTS, DISTRICTS, CANTONS, PRINCIPAL CITIES, AND COLONIES.

The old popular division of Paraguay into La Capital and La Campaña (the capital and the rural districts) is still in use. The Paraguayan territory is divided for the purposes of government into 84 circumscriptions called *Partidos* or *Departamentos*. But for the purposes of politics or legislation these 84 departments are grouped together and distributed into 24 districts (*Distritos*, or *Distritos electorales*). The *Capital* has 3 districts, called (1) Encarnación and Itapúa, (2) Catedral and Recoleta, (3) San Roque and Trinidad.

The *Campaña* has 21 districts, as follows:

(1) The First District, consisting of the Departments of Villa Concepción and Horqueta.

(2) The Second District, formed by the Departments of Villa de San Pedro, Villa del Rosario, Tacuaty, Lima, Unión, Itacurubí del Rosario, and San Estanislao.

(3) The Third District, consisting of the Departments of Arroyos y Esteros, Emboscada, Altos, Atirá, Caacupé, and Tobatí.

(4) The Fourth District, formed by the Departments of Piribebuy, Barrero Grande, and Caraguatay.

(5) The Fifth District, consisting of the Departments of Itacurubí de la Cordillera, Valenzuela, Ibitimí, and San José.

(6) The Sixth District, formed by the Departments of Ajos, Carayaó, San Joaquín, and Caaguazú.

(7) The Seventh District, formed by the Department of Villa Rica.

(8) The Eighth District, formed by the Departments of Mbocayati, Yataity, Hyaty, and Itapé.

(9) The Ninth District, consisting of the Departments of Ihacaguazú, Caazapá, and San Juan Nepomuceno.

(10) The Tenth District, formed by the Departments of Yuty, Bobí, and San Pedro del Paraná.

(11) The Eleventh District, formed by the Departments of Villa Encarnación, Jesús y Trinidad, Carmen del Paraná, and San Cosme.

(12) The Twelfth District, which embraces the Departments of Santa Rosa, Misiones de San Ignacio, Santa María, Santiago, San Miguel y Villa Florida, and San Juan Bautista.

(13) The Thirteenth District, consisting of the Departments of Ibicuy, Mbuyapey, and Quiquió.

(14) The Fourteenth District, formed by the Departments of Quindy, Acahay, and Caapucú.

(15) The Fifteenth District, consisting of the Departments of Carapeguá, Paraguari, and Tabapy.

(16) The Sixteenth District, formed by the Departments of Pirayú, Itaugua, and Areguá.

(17) The Seventeenth District, embracing the Departments of Limpio, Luque, San Lorenzo del Campo Grande, and San Lorenzo de la Frontera.

(18) The Eighteenth District, consisting of the Departments of Capiatá, Itá, Yaguarón, Ipané, and Guarambaré.

(19) The Nineteenth District, formed by the Departments of Villeta, Villa Oliva, and Villa Franca.

(20) The Twentieth District, formed by the Departments of Villa del Pilar, Villa Humaitá, Isla Umbú, Laureles, Tacuaras, Desmochados, Pedro Gonzales, San Juan Bautista del Pilar, Guazu-cuá, and Yabebiry.

(21) The Twenty-first District, which consists only of Villa Hayes and its territory.

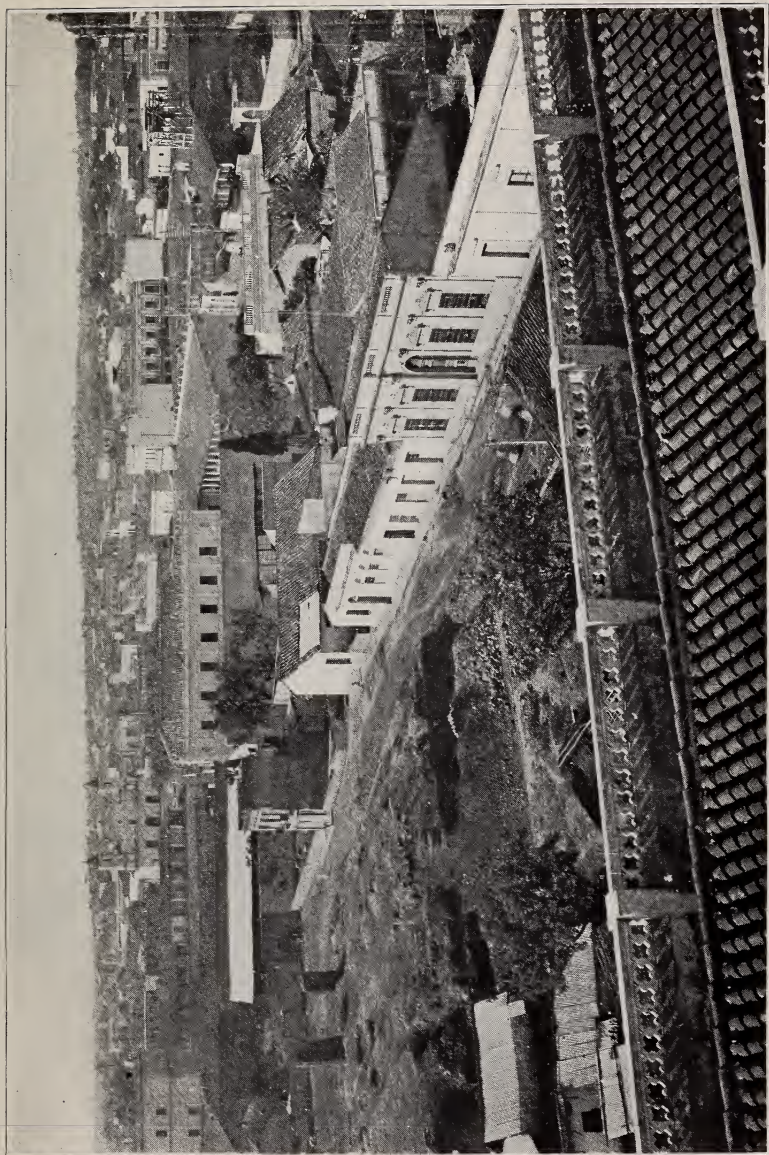
THE CITY OF ASUNCIÓN.

Asunción, or La Asunción, is the largest city in the country and the capital of the Republic. It is situated on the left bank of the Paraguay River, in latitude $25^{\circ} 18'$ south and longitude $57^{\circ} 30'$ west of Greenwich. It is the seat of the Government and the see of a Bishop of the Roman Catholic Church. It was founded in 1536, and is therefore much older than Buenos Ayres.

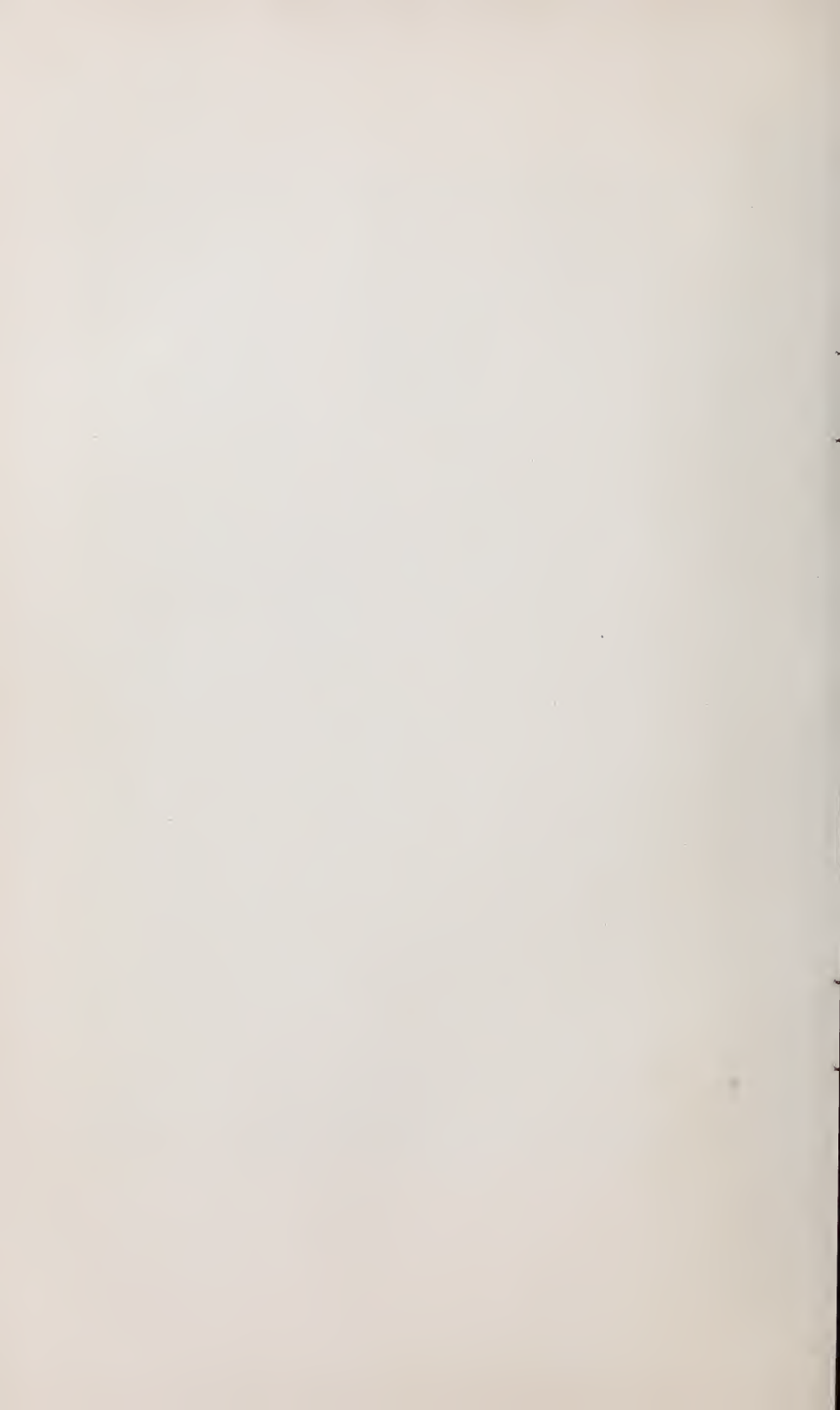
"The first part of the city seen on approach," says Consul Shaw, "is the remains of the arsenal built for Lopez by Messrs. Whitehead & Grant in the year 1861. It employed for some years about 300 men, among whom were 30 English mechanics, besides a few French and Germans, the rest being natives. They constructed and launched several mail steamers, which plied between Asunción and Montevideo; also cannons, stoves, tools, bells, and a host of other useful articles were turned out in vast numbers.

"As in all South American towns and cities, the streets cross each other at right angles, or checkerboard fashion, cutting the city into blocks of 80 yards square, the streets being 15 yards wide and the sidewalks from 4 to 5 feet wide."

The appearance of the city is, in general, very neat and pleasant, and it is becoming more and more so every day. The Government has undertaken in earnest the completion of all the unfinished public buildings and the restoration of those which were left in ruins by the war, as well as many other improvements of all kinds in the city, and the Paraguayan Congress has granted for these purposes the most liberal appropriations.



CITY OF ASUNCIÓN.



Asunción has a handsome Cathedral and fine parochial churches, as those named La Encarnación and San Roque, a Palace for the Government, and a Hospital, a Public Library, a Custom-house, a College and University, two Market houses, a Theater, and some Depots or railway stations, which attract considerably the attention of the tourist. The city has also very fine quays and shipyards.

The two unfinished structures which excite greatest interest, both of them started by Lopez, are the old Theater, an imitation of the celebrated La Scala, at Milan, which occupies an entire block, and the Mausoleum, an imitation of the "Hotel des Invalides," at Paris, which Lopez undertook to build for the reception of his own body.

There are a great many fine residences throughout the city and suburbs, which, with their surroundings of shrubs and flowers, form a picturesque and pleasing sight. The houses are generally one story high, and they are constructed in such a way that the necessity of a fire department has never been felt.

The city is well guarded and patrolled by police, and, as Consul Shaw says, "crime and lawlessness are almost wholly unknown." It is lighted with petroleum, but an electric plant will be soon established by an American Company known by the name of "Paraguay Development Company."

Communication between the different parts of the city is facilitated by two lines of street cars, whose tracks are about 17 miles in length. There are three rural lines, one to Tacumbú, another to Trinidad, and another to San Lorenzo. The first and second are horse-car lines, the third is a steam line.

In 1891 the business of Asunción was conducted by about 420 houses, whose capital, in the aggregate, amounted to \$2,000,000.^a There are also four Banks and one Building Association.

The Banks are: *Banco Mercantil del Paraguay*, with a capital of \$2,500,000; *Banco Territorial*, with a capital of \$500,000; *Banco de Los Rios y C.^a*, with a capital of \$125,000, and *Banco Agrícola*, with a capital of \$3,468,341. The *Banco Mercantil* has branches at Villa Concepción, Villa Encarnación, Villa del Pilar and Villa Rica.

Two new Banks have been recently founded, namely, *Caja de Crédito Comercial* and *La Edificadora*.

One morning and five evening papers are published daily at Asunción. The daily papers are "El Diario Oficial," which is the Government's organ, "El Paraguay," "La Democracia," "El Cívico," "El País," and "La Patria."

The "Boletín Quincenal del Centro Comercial del Paraguay" appears every fifteen days. The "Revista del Instituto Paraguayo, La Revue Mensuelle" (published in French and English), "El Archivo Nacional"

^aThe business houses in the whole country in 1900 were 2,298, representing a capital of \$66,673,534.

and the "Anales de la Universidad Nacional" appear every month. "El Porvenir," "El Estudiante," "El Enano," and "El Paraguay Rundschau" are weekly papers. "El Boletín del Congreso Nacional" is published daily, during the session of Congress.

Consul Baker says that "No person can go to Paraguay without carrying away pleasant impressions." If he visits Asunción he will find there a high degree of cultivation and a "refinement equal to that of any city of South America," and if he goes to the Campaña he will be received with such abundant hospitality as to make him feel at once that "he is in the midst of friends."

Consul Baker speaks also with great praise of the College and the schools of Asunción, and says that its Public Library contains several thousand volumes, among which he was pleased to see the works of many American law writers, such as Kent, Story, Wheaton, Greenleaf, and others, of the American historians, Bancroft, Prescott, Irving, Motley, and others, full sets of Appleton's Encyclopedia, etc.

VILLA RICA.

Villa Rica is a flourishing city of about 25,074 inhabitants. It is situated in the interior of the country, at about 90 miles east of Asunción, in the midst of a rich agricultural region, with hills running east and west covered with fine timber. It is connected by rail with the capital, and is in easy communication with it. The principal industries are cigar making and the manufacture of orange wine, bricks, tiles, etc. Its people deal considerably in honey, native brandy, called *aguardiente*, timber, leather, carts, *ñanduti* embroidery, hammocks, cotton fabrics, etc. Villa Rica has some important commercial houses and a branch of the Agricultural Bank, or *Banco Agrícola*.

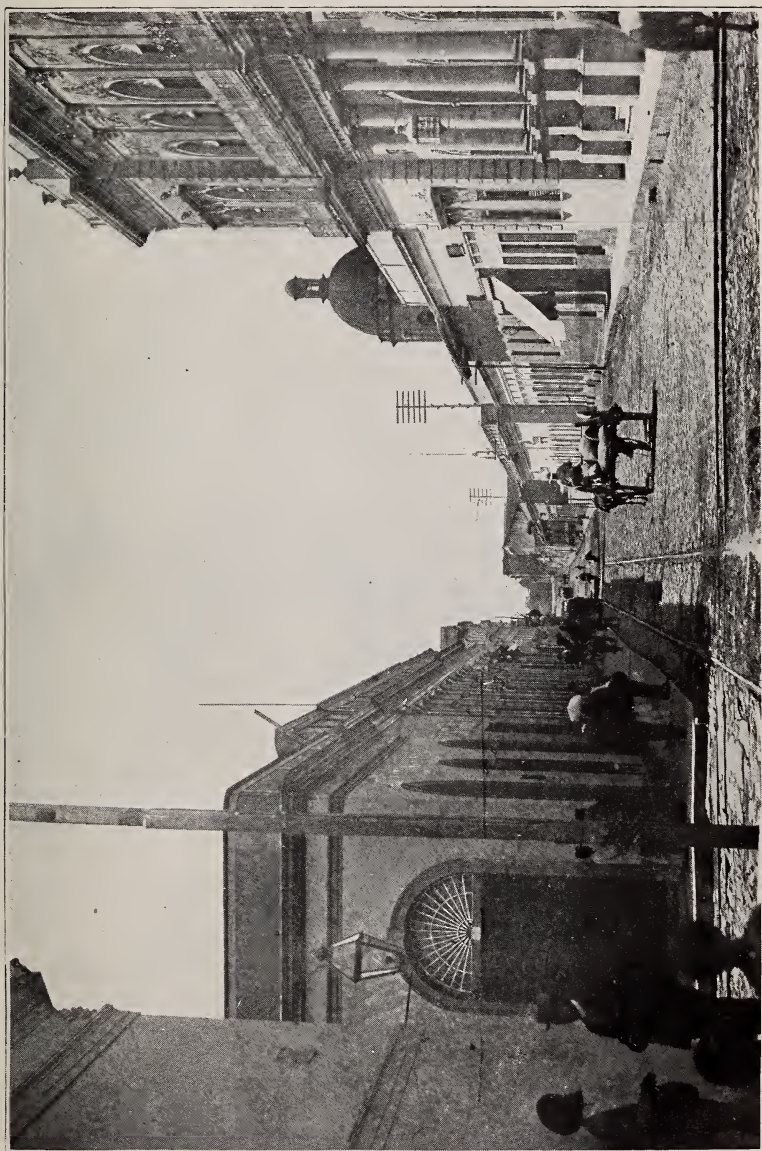
The fact that this city is surrounded by lands where tobacco and mandioca of the best qualities abundantly grow, and in the vicinity of hills covered with timber very suitable for furniture and building purposes, has made it an agricultural and commercial center of great importance.

VILLA CONCEPCIÓN AND OTHER TOWNS.

Villa Concepción has the reputation of being the second city of the Republic on account of its commercial importance. It is situated on the left bank of the Paraguay River, 213 kilometers from Asunción. Its population is 13,654.

It is a port of entry and delivery, where the steamers navigating the Upper Paraguay regularly touch.

Its most important buildings are the City Hall, the Custom-house, the parish church, the Market house, and some fine private residences. It has a line of street cars, telephonic service, a bank, a branch of the *Banco Mercantil*, of Asunción, another branch of the *Banco Agrícola*



PALMA STREET, ASUNCIÓN.



of the same city, and several commercial houses trading directly with the La Plata and the European markets.

Its principal commerce consists of yerba mate and cattle.

The other towns deserving special mention are *Villa del Pilar*, with 5,742 inhabitants; *San Estanislao*, with 10,920; *Caazapá*, with 14,914; *Luque*, with 14,777; *Villa Encarnación*, with 10,724; *Yuty*, with 9,800; *Capiatá*, with 9,207; *Carapeguá*, with 13,930; *Ytauguá*, with 6,624; *Paraguanri*, with 9,128; *Villeta*, with 7,072; *Villa San Pedro*, with 7,987.

VILLA HAYES COLONY.

Villa Hayes, the chief town of the colony bearing the same name, is situated on the right bank of the Paraguay almost opposite Asunción. It was founded in the eighteenth century by Father Gonzalez, a missionary, and continued in a flourishing condition under the name of "Villa Occidental" (the Western Town) until 1855. Then President Lopez changed its name to that of Nueva Burdeos (New Bordeaux), because he brought over from Bordeaux and other neighboring places in France a number of immigrants to settle there. The claim was made by the Government of the Argentine Republic that the territory upon which Nueva Burdeos, or Villa Occidental, stands, as well as the town itself, belonged to the Argentine Republic and not to Paraguay; and the question having been submitted to the arbitration of the President of the United States, at that time Mr. Rutherford B. Hayes, was decided in favor of Paraguay. The Paraguayan Government, in compliment to the arbitrator, again changed the name of the town and called it "Villa Hayes." (See Appendix No. 2.)

This colony covers an area of 3,125 *cuadras*, and is watered by the Confuso River on the south and the Rio Verde on the north. Agriculture in its various branches and cattle breeding are its principal industries. Sugar cane, specially, is cultivated with considerable success.

It has also several brick factories and a distillery equipped with the best machinery for the production of liquors, principally *caña*, or white rum.

In 1890 the colony contained 91 families, consisting of 315 persons, of whom 112 were Swiss, 69 French, 38 Italians, 22 Belgians, and the rest Germans, Austrians, and Spaniards.

The number of *cuadras* under cultivation in the same year was 389, which were divided in *lines*^a and distributed as follows:

Sugar cane, 9,504 *lines*; maize, 8,085; beans, 1,917; mandioca, 2,366; sweet potatoes, 2,555; lucern, 1,460; tobacco, 321; onions, 336; fruit trees, 17,605.

^aThe Paraguayan square *league* contains 1,743 hectares, or 3,600 *manzanas* or *cuadras*. The square *cuadra* is equivalent to 10,000 square yards. The *line* is a square space measuring 100 yards on each side.

The exports from the colony to Asunción in 1890 amounted to \$40,280, out of which \$21,840 were represented by 7,800 demijohns of *caña*.

SAN BERNARDINO COLONY.

The colony of San Bernardino was founded in 1881, on the same plan and with the same privileges as Villa Hayes. Its chief town, San Bernardino, has a good situation on the northern shore of the Ipacaray Lake, which is an attractive sheet of water, abundant in fish, lying at the foot of the Altos Mountains. It is two hours' journey by railroad from Asunción. Owing to its topographical situation and pleasant surroundings, it has become a well-frequented watering place. Baths established on the banks of the lake and well-arranged hotels, generally in the shape of Swiss cottages, attract the people there during the summer. The whole country around this town is fairly settled. The wealthier inhabitants of Asunción have fine residences there.

Mr. Scharer, the Paraguayan Immigration Commissioner, reported in July, 1888, that San Bernardino had over 600 permanent residents, most of them Germans, engaged in agriculture and in the manufacture of cheese and butter, which sells with advantage at the Asunción market. Many colonists are owners of over 100 head of cattle each. As at Villa Hayes, considerable attention is given at San Bernardino to the cultivation of the sugar cane, and two mills are constantly at work extracting the juice, which is all consumed in the manufacture of the white rum of the country.

In 1900 the population of this colony was 1,202.

COLONIA NACIONAL.

The Colonia Nacional, formerly called "President Gonzale's Colony," on account of its having been founded by that distinguished personage, is a very flourishing center of population. Full information about it was given in the chapter relating to Paraguay in Bulletin No. 53 of the Bureau of the American Republics, published in 1893, under the title of "Laws of the American Republics Relating to Immigration and the Sale of Public Lands."

Its population is 847 inhabitants.

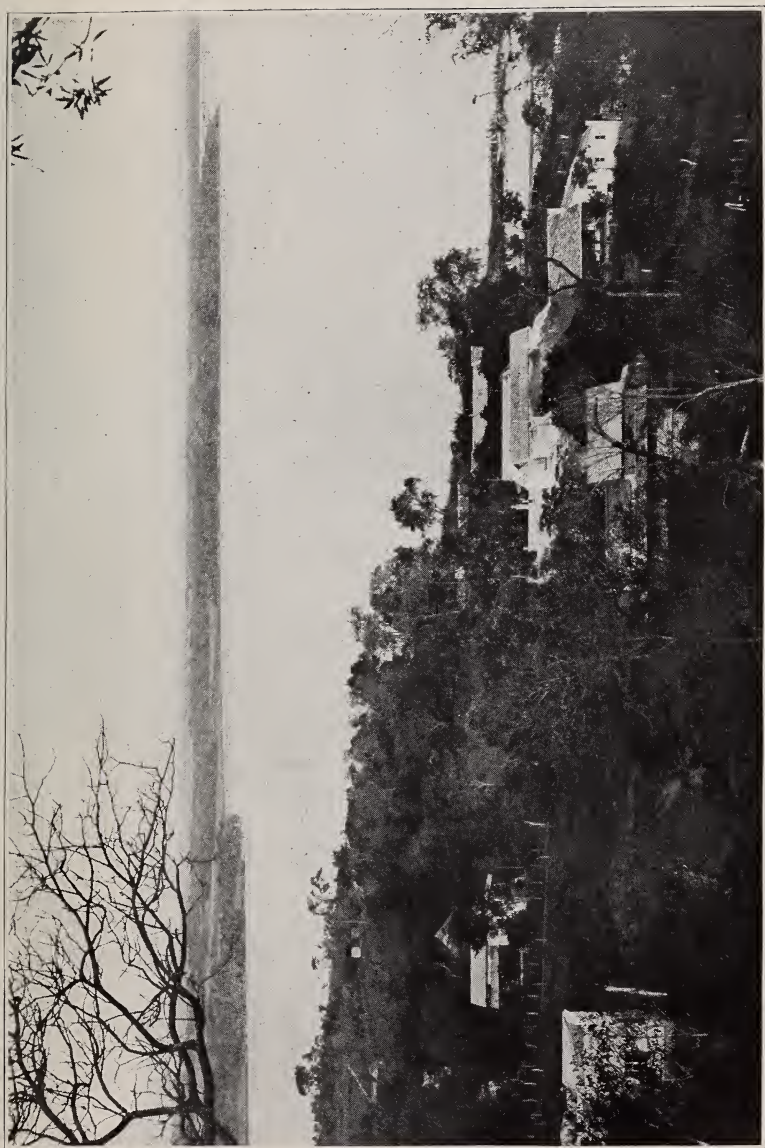
Its cultivated area is 950 *cuadras*.

Its export trade in 1901 represented the value of \$245,971.

Further information in regard to this colony will be found in Appendix No. 3.

NUEVA ALEMANIA COLONY.

The colony called *Nueva Alemania*, or New Germany, was the first private colony established on a formal basis in Paraguay. It was organized in 1887. It is situated in the Department of San Pedro, in



SAN BERNARDINO.



latitude 24° south, at the junction of the Aguaray and Aguaraymi rivers, about 23 miles from the Paraguay River, with which easy communication is established by means of flat-bottomed boats and small steamers of light draft.

The grant originally made by the Government in favor of Dr. Forster consisted of 36 miles square, composed for the most part of virgin forests. Consul Shaw says that the land in this colony has been sold at the rate of \$2 per *cuadra*.

The population of Nueva Alemania in 1890 consisted of 90 families, comprising 193 persons.

The colony has 129 *cuadras* under cultivation, and 1,400 head of cattle.

ELISE (*San Antonio*) COLONY.

The colony of this name, which was started in 1890 by the Paraguayan and River Plata Bank, is situated in the Department of San Lorenzo de la Frontera, on the left bank of the Paraguay River, at about 9 miles from Asunción.

Tobacco, sugar cane, coffee, ramié grass, and other valuable productions are raised there.

The conditions under which, according to Consul Shaw, the above-named Bank gives its lands to the colonists, are as follows: Each family is given 16 *cuadras* with a two-room house standing thereon, two of the *cuadras* being already prepared for planting. The colonists are given also seed and agricultural implements. The price is \$100 per *cuadra*, payable with interest in fifteen years, each installment being due within the first three months of each year. The Bank will also loan to colonists from \$400 to \$500, with interest at 10 per cent per annum.

In 1890 the population of this colony consisted of 274 inhabitants.

OTHER COLONIES.

The other colonies are *Nueva Australia*, *Veinte y Cinco de Noviembre*, *Cosme*, *Guillermo Tell*, *Colonia Catalana*, and *Hohenau*.

The *Nueva Australia* Colony is situated in the Department of Ajos and has a population of 597 inhabitants, composed of Paraguayans, Australians, and English.

The *Veinte y Cinco de Noviembre* Colony is situated in the same department as the *Nueva Australia*, and has a population of 1,045 inhabitants, mostly Paraguayans. The business of this colony is agriculture and cattle raising. The cultivated area consists of 633 square *cuadras*.

The *Colonia Cosme*, in the Department of Caazapá, is inhabited by Australians, and has a great future. Its population consists only of 93 inhabitants. The foundation of this colony is very recent, but in

spite of this fact the colonists have a school, some stores, a carpenter shop, a shoe factory, a sawmill, a tanning establishment, and 65 *cuadras* under cultivation.

The *Guillermo Tell* Colony is situated near Tacurupucú, on the confluence of the Monday and the Paraná rivers. It was founded in 1893 by Dr. Moisés S. Bertoni. Its population consists of natives of Switzerland, all engaged in agriculture.

The *Colonia Catalana*, situated in the Department of Villa del Rosario, has a population of 74 inhabitants. Its cultivated area measures 58 *cuadras*. Head of cattle in the colony, 970.

The *Hohenau* Colony, situated in the Villa Encarnación district, consists of 117 inhabitants, of Brazilian, German, and Paraguayan nationalities, most of them engaged in the cultivation of coffee.

The Paraguayan land law of 1885 and the principal provisions of the Executive Decree of February 26, 1902, regarding grants of lands, will be found in Appendix No. 4.

Chapter X.

AGRICULTURAL WEALTH.

Agriculture is the principal source of wealth for Paraguay. The fertility of the greatest part of the Paraguayan soil is almost inexhaustible, and abundant crops can be obtained almost by the mere scratching of the earth with the rudest of implements. Manure is neither used nor needed. Foreign colonists have introduced improved methods of cultivation, and the crops have increased in proportion.

THE YERBA.

The yerba, or yerba mate, also called "Paraguayan tea," is the chief and most distinctive product of the country.

The plant from which it is made or taken is an evergreen bush, resembling in some respects the orange tree, about 8 feet high, which grows wild in a large portion of the territory of Paraguay, in the Brazilian provinces of Matto-Grosso, Paraná, and others, and in the Argentine province of Misiones. Its botanical name is *Ilex paraguayensis*. It belongs to the *Illiniceæ* family.

The districts in which this plant abounds are called "yerbales," and the most famous of these yerbales are those of Chirigüelo, Tacurupyta, Concepción, Caaguazú, Tacurupucú, Yuti, and Jesús.

In the time of the Jesuits this bush was cultivated with care. They owned at Santiago a yerba grove with no less than 20,000 trees. The cultivation was discontinued thereafter; but efforts have been made in recent times, with considerable success, to revive it. The probabilities are that before long the business of making "yerbales artificiales" will be amply remunerative.

The yerba—that is to say, the commercial article—consists of the twigs and leaves of the yerba bush, dried and reduced to a kind of coarse powder. Sometimes the dried leaves of the plant are packed together without passing through any grinding process, and in this way they are now being sent to Europe. An infusion of either the leaves or the coarse powder is used for the same purposes as tea.

The name of "mate," under which the beverage thus prepared is designated, proceeds from the apparatus in which it is prepared, consisting of a kind of gourd where the yerba is placed and where the hot water is poured upon it, and of a peculiar tube or pipe through which the infusion is sipped.

The yerba contains 1.850 per cent in grams of caffeine. The mate when prepared with hot water possesses the same general properties

as economical agent as the caffeine, but when prepared with cold water is nutritious and restorative (Parodi).

The "Lancet" says:

Mate tea possesses the advantage of being a refreshing and restorative beverage, owing in a large measure to the theine it contains, without the evil effects of astringency.

The "British Medical Journal" says:

The mate tea is useful in cases of dyspepsia, in which tea proper, owing to its energy or to the astringent substances it contains, proves injurious.

The "Society of Arts Journal" says:

The mate tea has a peculiar invigorating power which neither the tea of India or of China nor the chocolate can pretend to possess. Travelers who drink mate tea can walk for six or seven hours without feeling any desire for food.

A company has been recently organized in London having for its object to popularize the use of the yerba mate.

The Paraguayan yerba is considered to be superior to that grown elsewhere and is cheaper than coffee or tea. While coffee involves a long process before it can be shipped, yerba can be prepared in thirty-six hours. Efforts to introduce it in Europe have failed, but it is used by millions of people in Brazil, the River Plate countries, Chile, Peru, and Bolivia.

In referring to this point, Consul Shaw says (Report of 1891) as follows:

The extent of the forests of the *Sociedad Industrial Paraguaya* (Paraguayan Industrial Company) in the Departments of Concepción, San Pedro, San Estanislao, Igatimi, and Tacurupucú consists of 400 square leagues, according to titles of purchase under surveys of Real de Oliveira and Santiago Rivas. The production for the present year will not be under 500,000 arrobas (the arroba is 25 pounds). The entire output of the yerbales for the year 1890 will be about 800,000 arrobas, and it is estimated that 1,000,000 arrobas can be gathered yearly. The average price for the yerba in the present year is \$5 per arroba. The total production represents a value of \$4,000,000.

The *Sociedad Industrial Paraguaya*, with 400 square leagues of forest, produces nearly 500,000 arrobas. The 1,000,000 arrobas which are calculated as the maximum output yearly should represent, without fear of committing an error, the existence of yerbales to the extent of 800 square leagues. Every year new ranches are established, and it may be safely stated that the extent of the yerbales, or forests, of Paraguay was 1,000 square leagues at the close of the year 1890.

The following table shows the amount of yerba exported between 1881 and 1886:

Year.	Arrobas.	Value.
1881.....	496, 876	\$621, 095. 00
1882.....	518, 381	647, 976. 25
1883.....	622, 801	778, 501. 25
1884.....	583, 481	729, 351. 25
1885.....	493, 531	616, 913. 75
1886.....	442, 940	553, 675. 00

In 1894 the exports reached the sum, never equaled before or afterwards, of 766,850 arrobas.

Mr. E. L. Baker, Consul of the United States at Buenos Ayres, sent, under date of November 30, 1882, to the Secretary of State of the United States, a Report bearing specially upon this subject, which was published from page 245 to page 252 of Consular Report No. 28, corresponding to February, 1883. The importance of this Report justifies its reproduction in full in this Handbook as Appendix No. 5.

SUGAR CANE.

The sugar cane is cultivated on a large scale and produces very well. The sugar mills of the country, generally consisted, until recently, of two heavy rollers of hard wood in a massive timber frame, geared together by wooden cogs, set in motion by a pole fastened by strips of rawhide to the horns of a yoke of oxen, who are driven around in a circle. The cane is passed between these rollers, a handful at a time, and the juice thus extracted is strained through a coarse cloth and evaporated in an open copper kettle over a fire built in the open air. Granulation is seldom achieved. The usual product is in the form of thick molasses, and is stored in bags of hide until required for use.

At the present time, iron machinery, capable of extracting from the sugar cane from 60 to 70 per cent of its juice, is of general use on the plantations.

Consul Hill in his Report above cited said:

Sugar cane is grown in all parts of the Republic, and of all the crops of the country it is the surest and most lucrative. The growing of the cane is capable of almost indefinite extension, and should be the crop of the future. Three varieties give good results: The *Saccharum officinarum*, which is white and very sweet; the violet cane of Taití, which reaches maturity sooner than the others, known to the world from having long been cultivated in the English possessions; and, lastly, a third species, with slender stalk, fluting green, and joints far apart, which yields much sugar and has been successfully introduced into the Argentine Republic.

A plantation of sugar cane requires a minimum of work on the part of the laborer, as the same plant lasts for a period which varies from five to fifteen years, according to the nature of the soil and the kind of nurture. The only thing to be done is to weed out the grass at the time when the stems begin to show up. Nine months thereafter the cane is ready for cutting. Each hectare (2½ acres) produces on an average 250 *azumbres* (1 *azumbre* is equal to half a gallon) of molasses. * * * Notwithstanding the excellent quality of the cane, for the production of which both the soil and the climate are perfectly adapted, 500,000 pounds of foreign sugar are annually consumed. * * *

The variety of sugar cane most valued in Paraguay is the one called "Tucumán," which yields a greater quantity of saccharine matter than all the others. It was introduced in the country by Señor Don José Segundo Decoud and was cultivated for the first time at Luque, from where it has been taken to the rest of the country and propagated with great success.

In 1901 the plantations of sugar cane in Paraguay covered an area of 10,536 hectares, or 26,035 acres.

One hundred thousand kilograms of sugar cane can be raised on an area covering one *cuadra*, or 10,000 square yards.

TOBACCO.

Tobacco is one of the principal products of the country and is cultivated in all sections of the same; but the article grown at Luque, Itagua, Ita, or Villa Rica is the most highly prized. The amount of tobacco exported rose in 1886 to 416,006 arrobas, and in 1890 to 615,301.

Among the varieties of tobacco which are most valued at Paraguay, the "pety-canela," proceeding from seeds from Cuba, and the "pety-hobby," cultivated at Villa Rica, must be prominently mentioned.

The commercial classification of the Paraguayan tobacco is as follows: *Pará* tobacco; *doble*, or double; *bueno*, or good tobacco; *regular*, or tobacco of fair quality; *medio*, or tobacco of average quality; and *pito*, which is the class most inferior. The *Pará* tobacco has 6 per cent of nicotine, and the tobacco of the *pito* class, which is the mildest of all, has only 3 per cent.

The Agricultural Bank (*Banco Agrícola*) has made great efforts to propagate all over the country the seeds of the Habana tobacco, and the results thus far secured have been very favorable. The quality of the tobacco has been greatly improved by the new methods employed for drying and treating the leaves. There are good grounds for believing that in a short time only one-half of the total production of Paraguayan tobacco will represent a value of \$3,750,000 in gold.

There are at present 9,679 hectares of land devoted to the cultivation of tobacco. The Habana tobacco is always given preference. Its transformation into Paraguayan tobacco is rapidly accomplished, and the price of the article is thereby increased, to the benefit of the farmers.

At the Paris exhibition of 1855 a gold medal was awarded for samples of the petty-hobby and petty-pará tobaccos.^a The cultivation of the plant has increased greatly of late years, for in 1829 the crop amounted to only 2,675,000 pounds, and in 1860 rose to 15,000,000 pounds. Tobacco cultivation is very profitable and is said to yield 50 per cent on the capital invested.

The following table shows the amount of tobacco exported during the six years elapsed from 1881 to 1896 and its official value:

Year.	Arrobas.	Official value.	Year.	Arrobas.	Official value.
1881.....	336, 030	\$672, 060	1884.....	125, 861	\$251, 722
1882.....	204, 827	409, 656	1885.....	214, 324	428, 648
1883.....	290, 352	580, 704	1886.....	416, 006	832, 012

^aIt may not be inopportune to set forth here that Paraguay was awarded 39 prizes and 21 honorable mentions at the Buenos Ayres Continental Exposition of 1882; 36 prizes at the Antwerp Exposition of 1885; 50 prizes at the Barcelona Exposition; a gold medal at the Paris Exposition of 1867, and 49 prizes at that of 1889, 34 prizes at the World's Fair at Chicago; and 50 prizes at the Brussels Exposition of 1897.

The exports of tobacco during the last three years (1899 to 1901) have been at the average rate of 3,250,000 kilograms per year.

COTTON.^a

Cotton grows without difficulty throughout the whole country and in some localities reaches its highest rate of production. Before the war it was the greatest national staple, but at present its cultivation has declined, owing to the scarcity of cheap labor. In 1863 the cotton crop amounted in value to \$450,000 in gold. It is to be expected that when the population of the country returns to its former figures the cotton industry will recover its original importance, especially if the prices are remunerative enough to cover the expenses, which are relatively insignificant; but the future of this cultivation really depends upon the establishment in the country of at least one establishment for the manufacture of cotton goods. The manufacture of sheeting and all other cotton goods for domestic use and for exportation to the Brazilian State of Matto Grosso may prove to be a very important undertaking. The Government would no doubt grant temporary assistance and privileges to an industrial enterprise of this kind and promote the cultivation of the plant, so as to secure for the factory an abundant supply of raw material.

There are at present in the territory of the Republic 237,429 cotton trees.

MANDIOCA.

One of the staple products of the country is what is called "mandioca," which is grown in large quantities. From its tuberculous roots a wholesome and palatable description of arrowroot, which serves as food for a great part of the people, is prepared.

There are 38,208 hectares devoted to this cultivation.

The mandioca starch can be exported in considerable quantities.

INDIAN CORN, RICE, WHEAT.

Indian corn.—Indian corn, or maize, abundantly grows all over the country. It frequently yields one hundred and fifty fold. It is, after mandioca, the chief support of the natives.

Rice.—Rice, when cultivated, will yield as much as two hundred and fifty fold. Now it is only sown in limited quantities for home consumption. Before the war it was cultivated on a large scale, and the steamers of Lopez used to take to Buenos Ayres about 300 bags on each trip. The lowlands along the Tebicuari River are admirably adapted for this cultivation. There are 994 hectares devoted to it.

The machinery for hulling and polishing the rice is imported from the United States. That used for sorting the grain generally comes from Germany.

^a See Appendix No. 7.

Wheat.—The general impression which seems to prevail that wheat can not be grown in Paraguay on account of the warm climate is erroneous. All the experiments made before the war, in nearly all sections of the country, were successful.

Barley and flax.—Barley and flax grow well and are cultivated on a small scale.

COFFEE.

The coffee tree of Paraguay produces a beautiful berry, full and firm, and of exquisite flavor and aroma. The hope is entertained that it will be cultivated on a large scale; but owing to the scarcity of labor it is now grown only to a small extent, and most of the coffee used is imported. Five years are required before the first crop can be gathered.

At Bernal-Cué, near the town of Altos, there is a coffee plantation with 100,000 trees, out of which there are 30,000 in perfect state of production. This plantation belongs to a German Company whose capital amounts to \$800,000 in Paraguayan currency.

The Agricultural Bank grants, as an inducement to the coffee growers, a premium of 30 cents for each tree in good state of cultivation, and the privilege of borrowing money from it, in the same proportion, on very favorable conditions.

There are 165,557 coffee trees in the Republic.

RUBBER.

The mangá icé, or India rubber tree ("curupicay"), grows abundantly in the northern part of Paraguay. It yields an article of excellent quality. Another tree which produces excellent caoutchouc, called "manicoba," is also found in the country.

TEXTILE PLANTS.

Paraguay produces many fibrous materials of great commercial value. Prominent among these is the "caraguatá," which grows spontaneously everywhere in the Republic. The fibrous substance is in the long, thick leaves. The leaves of the plant are armed at every point with sharp-pointed needles, which render them difficult to handle. Experiments made in the preparation of the fiber for the market with machinery constructed in Arroyos and Esteros seem to be on the point of success. The "caraguatá" is thought by some equal to the Indian jute. Consul Shaw says that the interest awakened in England, France, and Germany by this product makes it merit most serious study, and that there is no possible doubt that the best results would be obtained if the product could be worked with competent hands and proper machinery.

Other textile plants are the "ibira," which is better for fine fabrics than the caraguatá; the "ortiga gigante," the "cocoanut," and the

“guembepí,” the “yatahy,” the “samuhú,” and the “caaporopy.” The barks of many trees yield excellent fibers. Ramié can be cultivated with great profit; it may yield as much as six crops per year.

FRUITS.

On account of its soil, climate, and rainfall Paraguay is a country admirably adapted for raising fruit. The soil is porous and light, the climate belongs to the same isothermal belt as Naples, Málaga, Barcelona, and Algiers, whose fruits are celebrated. There is nevertheless considerable room for improvement in the methods of growing, pruning, transplanting, etc.

Says Consul Hill:

Oranges.—In any enumeration of the fruits of Paraguay the orange naturally comes first, for this country almost merits the name of a land of orange trees and groves. Orange groves form the background of every view; every town is buried in heir luxuriant foliage, and they grow wild in every forest. The planting of this tree was introduced by the Jesuit Fathers, and being produced without nurture, from the seed which were scattered in all directions by the birds, their dissemination has become universal. Millions of oranges rot on the ground every year for want of roads and means of transit to bring them to market. From April, when the fruit matures, to October the river boats carry great quantities to Buenos Ayres every trip, half a million frequently being piled up on the deck. They are delivered on board (women and children bearing them in baskets perched on their heads) at \$3.50 per 5,000. It is estimated that the shipment of oranges last year aggregated 50,000,000.

The Paraguay orange is of large size and has a rich flavor. The tree begins to bear at six years. * * * The bitter orange grows wild.

The exports for the ten years from 1881 to 1890 are as follows:

Year.	Number.	Official value.
1881.....	23,958,850	\$47,917.70
1882.....	15,761,600	31,523.20
1883.....	24,182,200	48,364.40
1884.....	27,275,000	54,550.00
1885.....	30,056,300	60,112.00
1886.....	32,482,500	64,805.00
1887.....	36,520,000	68,306.00
1888.....	42,800,000	70,100.00
1889.....	52,350,000	75,740.00
1890.....	65,000,000	81,120.00

The number of oranges exported in 1900 was 89,216,615.

Eleven different industries, all of them lucrative, depend upon this fruit. The importance of some of its products is shown by the following list of their prices per kilogram in the markets of Europe:

	Francs.
Orange-flower water.....	2.25
Essence of bergamota.....	32.00
Essence of “toronja”.....	32.00
Essence of lemon.....	22.00
Essence of neroli (southern).....	750.00
Essence of neroli (Paris).....	1,000.00

Grapes.—The grape is indigenous to Paraguay, and was successfully cultivated in the time of the Jesuits, though, on account of the extreme moisture of the climate, it is liable to rot. There are now no vineyards worthy of the name in Paraguay, but the cultivation of the grape is being revived with notable success.

The Agricultural Bank has recently given an impulse to this industry by distributing, without charge, 300,000 cuttings.

National wines are now being made.

Tártago, peanuts, and cocoanuts.—Tártago is cultivated, although on a small scale, for the oil which its seeds contain. When the latter are hulled they are also exported.

The extraction of oil from tártago seeds, peanuts, and cocoanuts constitutes one of the industries of the country. A very important establishment of this kind was founded at Asunción by a gentleman by the name of Mr. Böetner, and does a flourishing business.

Not less than 4,038 hectares of the territory of the Republic are used for the cultivation of peanuts, and the demands of this industry are constantly growing.

The cocoanut tree is indigenous, grows wild, and is found all over the country in very large quantities. Its fruit is used for food and is also exported, but its chief importance is due to the oil which it contains, and which is of great value in the manufacture of certain kinds of soap.

Bananas, etc.—The banana thrives in Paraguay and is exceedingly abundant. The hot summers bring it to perfection.

The chirimoya, papa, cactus fig, níspero, pomegranate, cacao, quince, plum, pear, peanut, and peach all grow on the red soil. In addition to these fruits there is a number of excellent native ones, known by their Guarani names. Watermelons and cantaloupes grow well everywhere.

The ananá, or Brazilian pineapple (*abacaxi*), deserves special mention. It was introduced in 1888, owing to the initiative of Don José Segundo Decoud, who was then Secretary of Foreign Relations. The plant is now cultivated all over the country. The most important plantations of this kind are those of Don Hector Carvallo, now Vice-President of the Republic, at Luque, and Don Juan E. Gonzalez, at Aregua. The *abacaxi* has been also cultivated with great success at the San Bernardino and Eliza colonies, and at Patiño-cué; and it is now exported to the countries on the Plata River. It is superior in quality to the native pineapple, which grows abundantly and is consumed in large quantities.

TIMBER.

One great source of wealth for Paraguay consists of its forests of rare and valuable woods, many of them possessing durability and powers of resistance such as no European woods can equal.

Says Consul Hill:

The very names of some of these trees, which exist in vast numbers in the virgin forests of the country, are comparatively unknown, except to botanists. The enumeration includes 51 different kinds of timber especially suitable for building purposes, 69 medicinal, 43 ornamental, 15 dyeing, 38 fruit, and 8 fibrous trees and plants. A large number of these trees will sink when thrown into the water. The average gravity is 70 pounds per foot. In transporting these woods to market they are floated, supported by cedar rafts. Dyewoods of red, yellow, violet, and blue are found in large numbers; also excellent barks for tanning. Resinous trees and shrubs for varnishing, wild vanilla, and gum trees grow in great numbers. The quebracho and curupay are shipped abroad for tanning and coloring.

The following data about the exports of timber in 1900 will prove to be interesting:

Hard-wood beams.....	yards..	526, 629
Cedar beams.....	do.....	344, 362
Hard wood (<i>rollizos</i>)	kilos..	4, 600, 273
Quebracho (<i>rollizos</i>).....	do....	11, 313, 723
Boards in general	meters..	48, 384
Hard wood rods (<i>varillas</i>)	do....	1, 076, 971

CATTLE AND STOCK RAISING.

Cattle raising is very profitable. Experienced cattlemen estimate the annual increase at the rate of from 20 to 35 per cent. At the close of the war the country was nearly depleted of horned cattle. On account of the better quality of grass and the abundance of shelter, cattle fatten more quickly and attain a greater weight in Paraguay than in the Argentine Republic. Improved breeds are being crossed with the original Spanish stock. There has also been a large increase in sheep raising. Horses and mules thrive, and hogs multiply themselves in enormous proportion, owing to the geniality of the climate and the abundance of food.

According to official statistics, there were in Paraguay, in 1900, 2,283,039 head of cattle, 75,363 horses, 107,426 mares, 4,067 asses, 3,490 mules, 214,058 sheep, 32,334 goats, and 23,887 hogs.

In 1886 there were 729,766 horned cattle in Paraguay. The greater part of these were imported from the Argentine provinces of Corrientes and Entre Rios and the Brazilian province of Matto Grosso. A yoke of oxen for the plow is worth \$40; a milch cow, \$15 to \$25; a horse, \$15 to \$25; a riding horse for town, \$60 to \$80.

The subjoined table shows the increase in stock for 1877, 1886, and 1890:

Description.	1877.	1886.	1890.
Cattle	200, 525	729, 766	861, 954
Horses	21, 140	62, 386	99, 693
Mules	1, 299	1, 925	2, 433
Sheep and goats.....	6, 668	32, 351	77, 576
Asses.....	1, 500	2, 239	2, 188
Hogs.....	3, 026	12, 250	10, 778

The recuperation in this industry has been quite remarkable, considering that out of the large number of stock in the country before the war not more than 15,000 were left in 1870, and that little or no attention has been paid to cultivating breeds. The best lands for stock raising are in Misiones, San Pedro, Concepción, and El Chaco.

Says Consul Hill:

The cheapness of the lands should be considered a great advantage to the stock raiser. Excellent land, well watered and wooded, with fine, nutritious grasses, and admirably adapted in every way for stock raising, can be bought in Paraguay at comparatively low prices. If the comer has not means or inclination to purchase lands, he may rent them at a nominal rate. A law was passed in 1880 by which Government lands can be leased for \$60 a league. No trouble would be experienced in leasing large bodies of land from private parties.

The estimated cost of a small cattle ranch in Paraguay is as follows:

	Gold.
One square league of land, with water, timber, and good pasturage, average price	\$3,000
Fencing—5 wires, posts every 2 yards, etc.....	907
Dwelling house and offices.....	170
Stock pens.....	60
1,000 animals	5,000
Three laborers, at \$41 per year	123
Direct tax	9
Miscellaneous expenses	300
Total	9,569

Chapter XI.

MINERAL RESOURCES.

No particular importance has been given thus far to the mineral resources of Paraguay, not because of any scarcity of wealth in this respect, but because of the undeveloped condition of the said resources, owing to the absolute and exclusive preference which naturally has been given there to the pursuits of agriculture.

The interesting book which Dr. E. de Bourgade La Dardye, published in French, in Paris, in 1889, with the title of "Le Paraguay" (The Paraguay), and which, translated into English, under the editorship of Mr. E. G. Ravenstein, appeared simultaneously at London and New York in 1892, contains the following statement:

An enumeration of the different minerals that are found would be very tedious. Suffice to say that the northern part of Paraguay, as far as latitude 22°, is covered with limestone, while the southern belongs to the sandstone formation and forms one huge mass of ironstone and manganese. Iron abounds everywhere. Marble is abundant in the north just as iron is in the south. Mines were worked in the time of Lopez. Pyrites are found in abundance. I have found a number of veins of copper. Kaolin exists in many districts, and I feel certain that the sandstone will prove to be bedded with coal, a commodity in which this fine country has hitherto been supposed to be deficient.

The "Anuario Estadístico" of Paraguay for 1888, which is an official publication, says that "iron, copper, manganese, gold, marbles, and building stone of the best quality are found in Paraguay in the greatest abundance."

There are in Paraguay four distinct varieties of soil; each one having its own special properties, namely: sandy, red, humus, and black soil.

The sandy soil is either white or red. The former is the resultant of the wearing away of the quartz rocks of the great central and eastern sierras, and its whiteness is almost dazzling. The latter is the detritus of the vast strata of sandstone which constitutes the main framework of the country. Upon the former nothing can grow except a few herbs, and consequently it is useless for any agricultural purposes. Upon the latter vegetation thrives, and vine, leguminous plants, pineapple, etc., vigorously grow.

The white sandy soil is found only in a small locality, in the region of the Central Paraná. But the red one is found in several places, and more especially around the capital.

The second class of soil, which has been called *red soil*, consists of clay and quartz, 65.6; oxide of iron, 18.7; lime, 2.8, and miscellaneous substances, among which the carbonate of lithine is prominent, 11.6. It is interesting to observe that this red earth of Paraguay is peculiarly adapted to the cultivation of the tobacco plant, and that in its chemical composition and in the quality which it imparts to the tobacco which grows on it, it is almost identical with the famous red earth of the island of Cuba. As in Cuba, this soil is not only propitious for the cultivation of tobacco, but also for that of maize, cotton, and coffee. It may be called the agricultural soil of the country, and it is not infrequent for it to be several yards in depth.

The third class of soil, which has been named "humus," and which lies within the virgin forests of the country, where it has accumulated for innumerable years, is the soil of the greatest fertility that can ever be found. To make it productive it is necessary, however, to bestow upon it a whole year's labor, as the land has to be cleared. But the toil will be amply rewarded, as there will be no risk of the toiler losing the benefit of his outlay.

The fourth and last class of soil, called "black soil," consists of alluvial deposits, and possesses the best qualities for brickmaking. When baked it has a nice red color. When mixed with lime as a fertilizer, it can be turned into a first-class soil for agricultural purposes. It is this kind of soil which prevails through the whole of western Paraguay, and the grass which grows on it renders cattle breeding on an extensive scale not only possible, but easy and greatly profitable. Experimental plantations of sugar cane have yielded so far encouraging results.

In order to make the information contained in this chapter more complete, the following is extracted from an article on Paraguayan minerals, which appeared in the "Paraguayan Monthly Review" for January, 1902:

MANGANESE.

This mineral is found in great abundance in the Cordilleras, where it presents itself between the layers of sandstone of that range.

KAOLIN OR PORCELAIN CLAY.

In the Departments of Caápuet, Ibicuí, Quiquio, Villa Rica, Cordillera, Villeta, Luque, etc., it is found as a product of the decomposition of feldspathic rocks in places where granite formations prevail.

TALC.

Talc is found near San Miguel de las Misiones, in the quartz rocks which exist there.

GRAPHITE.

Generally it is found in irregular deposits among the crystalline and plutonic rocks.

IRON.

Iron is found in large quantities in the district of Caapucú. The veins of this mineral cross the heights of this district in all directions, and are very notable for the quality and high grade of the ore, as well as for their situation on the banks of the river Tebicuary, and by the abundance of forests in the neighborhood which provide the necessary fuel for its smelting.

MAGNETIC IRON.

Near San Miguel in the Misiones District, one league from the banks of the Tebicuary, magnetic iron is found at little depth, among sienitic quartzite rocks.

HYDRIC OXIDE OF IRON.

This mineral is found in great masses, and is widely distributed throughout the whole of Paraguay, principally in the sandstones in contact with volcanic rocks.

The variety which is found in Villa Encarnación, on the banks of the Upper Paraná, contains 30 per cent of metallic iron and 48.3 per cent phosphoric acid. It is difficult to melt it by the blowpipe. It is soluble in muriatic acid.

SERPENTINE STONE.

Serpentine stone is known to exist in Paraguay, near the "Paso de Santa Maria," on the banks of the Tebicuary. It is of plutonic origin and very common among the rocks of primitive formation.

It is a silicate of magnesia, easily worked, and, like marble, adapted to sculpture and architecture. Columns, plates, veneers and many objects of adornment are easily made from it. Its mass, by its capricious markings, presents colors and an appearance so beautiful that it is preferred in all luxurious constructions. The serpentine tenaciously resists atmospheric decomposition, and for that reason but little vegetation is seen within the limits where the same predominates.

PORPHYRY.

The zone of plutonic formation existing in the departments of Caapucú, Quiindy, and Quiquió is rich in the dark violet variety of porphyry and also in the red and black ones. The dark violet and the black are not so abundant, however, as the red.

BASALT.

Near Villa Encarnación there is a rich vein of basalt, whose mass is traversed by many veins of carbonate of lime, consisting of 56 per cent of lime and 44 per cent of carbonic acid.

ARSENIC.

Arsenic is found at Arroyos and Esteros, specially at a point a little more than a league south of that village.

The rock containing it is a soft grindstone of yellowish white color with very fine laminae of white mica. The fossil remains which it contains consist of marine shells not very well preserved or clearly visible for classification of the families. Nevertheless their trilobite characteristics are easily distinguished. They belong to a family of crustaceans of a very particular form.

Other remains in the same rocks are undoubtedly tentacular whose definite classification has not yet been accomplished. They were probably the arms or tentacles of some marine jelly fish of a primitive epoch.

Generally fossils are scarce in the rock formations throughout the country. Only in the place mentioned and near Emboscada are they to be found.

A very good treatise on Paraguayan minerals can be found in the book of Mr. Du Graty, published at Besançon in 1862, under the title "The Republic of Paraguay."



Chapter XII.

INDUSTRIAL ENTERPRISES.

Owing to various causes, the full enumeration of which does not find a proper place in this Handbook, the Paraguayan nation has not as yet been able to reach that degree of progress, as far as manufacturing industries are concerned, which, under other circumstances, it might have attained without difficulty. Few countries in the New World can be found where raw material capable of being used for manufacturing purposes is as abundant and excellent as it is in Paraguay, and few also can claim with better reason than that Republic to have devoted its attention to this important business at an earlier period of its history.

When, in the year 1609, the Spanish Crown turned practically into the hands of the Society of Jesus the pacification of Paraguay and the administration of the government of that portion, at that time so vast and important, of the Spanish dominions, great efforts were made by that illustrious organization not only for the education of the natives, by founding schools and reducing the Guaraní language to a written idiom, but also for rendering them proficient in agriculture, architecture, and many of the arts of civilized life. The aim of the Jesuit Fathers was to secure, as far as practicable, that everything needed in the country could be manufactured at home.

All that has been left of those days, miraculously escaping the ravages of war and other calamities, from the magnificent Paraguayan churches, sumptuous monuments in more than one respect of architecture and sculptural ornamentation, to the marvelous Paraguayan lace, which is called in the native language *ñanduti* (cobweb), on account of its exceedingly fine texture, all done by the natives under the intelligent direction of the Jesuit Fathers, bears testimony to this assertion.^a

The Paraguayan people saw their soil strewn in those days with magnificent orange groves, splendid yerbales, and farms of all descriptions, and with factories of various kinds, which gave them work and contributed to their welfare.

^aThe first printing office in the whole La Plata region was established by the Jesuits in 1702. Subsequently they established others at Candelaria, Loreto, Santa María, San Francisco, and other localities. The greatest number of the books issued from these establishments were printed in the Guaraní language, and consisted of grammars and vocabularies of the same language and of translations into it from the Spanish.

All of this was done away with by the misfortunes which in the course of time befell Paraguay, especially the disastrous war of 1865 to 1870, which reduced the Republic to the mere wreck of a nation, although placing its people at the same heroic level as the Greeks of Marathon and Thermopylæ. But now that the internal quiet of the nation is fully assured, and those who are in charge of the Government are aroused to the importance of bringing foreign capital, liberal inducements are accorded to those who engage in manufacturing pursuits, the manufacturing business of the country, not less than its agriculture and everything else, has considerably brightened and increased.

In 1900 the trades and industries were represented by 1,094 establishments, with a capital of \$135,448,066 currency, while commerce was carried on by 2,298 houses, with a capital of \$66,673,534 currency.

The capital represented by the cattle-raising industry can be estimated at \$100,286,835 currency.

COTTON AND WOOLEN FABRICS.

The manufactures of the country consist chiefly of cotton and woollen fabrics, which the people use not only for underclothing, but also for dresses of both men and women. The spinning of the indigenous cotton—probably the most ancient art among them—is performed with the distaff, a slender spindle of wood twirled between the finger and thumb of the right hand as the fiber is drawn out from a tuft held in the left. The thread thus manufactured is remarkably fine, even, and strong. It is made into cloth in an equally patriarchal fashion. Weavers travel around the country with their looms, and frequently may be seen at work in the open air, the warp-roller hanging from a bough and balanced with stones as weights, while other stones, suspended by thongs of hide, raise the pedals. The thick woollen ponchos and saddle cloths woven by the natives are produced by methods quite as simple. The warp is wound over a wooden frame and a rough boat-shaped wooden shuttle is passed in and out of the threads. But in this way effective patterns are made, generally in black and white, or in a fine blue derived from the native indigo, and for durability these cloths are not to be surpassed.

Towels and other household articles of similar nature, made of native materials, are manufactured in all the Paraguayan villages.

PARAGUAY LACE.

The celebrated lace, which, owing to the similarity of its texture with that of the cobweb, has, as stated above, been called “ñanduti,” is made by the women of the country with cotton and other very fine fibers of native plants. Handkerchiefs and other articles made of this

lace have attracted, whenever exhibited in Europe and America, the greatest attention. This lace is as soft and lustrous as the richest silk, and is practically indestructible. Some of the designs are exceedingly beautiful. President Solano Lopez had one chamber in his palace hung with patterns of this lace of the finest class on a background of crimson satin, fastened with clamps of gold.

Consul Baker, in his Report, cited elsewhere, says as follows:

The most remarkable industry in Paraguay, however, is the manufacture of lace. It is a specialty of the country, entirely in the hands of the Paraguayan women, and finds a ready sale in all parts of South America. The skill which they display with the needle is wonderful, the art being another remnant of the lessons taught by the Jesuits. The specimens of edging, inserting, lace handkerchiefs, worked chemises, head gear, mantillas, curtains, shawls, tidies, sofa backs, and even hammocks, which these women sell very cheap, would in any other country in the world command exorbitant prices.

MANUFACTURE OF WINE AND BEER.

Wine has been manufactured in Paraguay ever since the days of the Jesuits. The wine which was then made and called "vino de la Cruz" is said to have been excellent.

The vineyards of Señor Don Emilio Aceval and the Guanes Brothers at Asunción, and of Messrs. Hippelein and Eyton at San Bernardino, produce excellent wines of the French type of Medoc and Sauterne.

Señor Foss, of San Bernardino, has recently made an elegant orange wine, which is sold at the rate of \$50 gold per barrel of 230 liters. There is an immense future in store for those who may engage in this industry, owing to the abundance of oranges and the small cost required for making this wine, which, when allowed to grow old, becomes similar to sherry.

The last published reports contain the statement that two breweries have been established and are doing good business. The most important of the two is that of Señor Creydt, at Asunción.

CAÑA.

Caña is the name given in Paraguay to a native rum of strong quality, which, like the one called in Cuba "aguardiente de caña," is obtained from the fermentation of the juice of the sugar cane, either before being cooked or after having been reduced by the action of the fire to the thickness of a heavy sirup. The fermented liquid is then distilled.

Primitive stills for making caña can be found in almost every village of Paraguay. The retorts are generally made of earthenware, and the operations are often performed by women. The results obtained are generally satisfactory, and very seldom it is seen that the caña of one plant of the country is not uniform in alcoholic strength and other qualities to the caña of all other sections.

Many of the distilleries are conducted by French people, who have introduced the Egrot system of stills and considerably improved the methods of fabrication.

Among the brandies made out of the sugar cane there is one very similar to the Jamaica rum, the actual cost of which is 50 cents per liter. Some people deem it to be as good as the best cognac.

It must be said in connection with this distillation business that considerable attention is now being given to the manufacture of cordials and other liqueurs. Wherever oranges grow it is possible to make bitters; but the country has also a great variety of aromatic plants, as the yerba, the guavira-mi, the ipabosy, the pineapple, and many others which can be and are successfully used for flavoring liqueurs, which are manufactured in large quantities and which in quality are far superior to those imported from France. The extraction of rich essences, both from oranges and other fruits, flowers, and leaves, which find a ready market in Europe, is another branch of the distilling industry.

SUGAR.

The manufacture of sugar is a very promising industry in Paraguay, but so far it has received no more attention than is necessary for the home consumption. It is calculated that $2\frac{1}{2}$ acres of land can produce in Paraguay, without any effort, 30 tons of sugar cane, which may yield in the proportion of 154 gallons of juice per ton, if the canes are passed through an iron mill moved either by horses or oxen. If the canes are passed through the ordinary wooden trapiche, the quantity of juice will be reduced to 110 gallons per ton. Should steam engines be used, as in Cuba and in other places, the amount of juice obtained would be very large. Most of the juice is used to manufacture caña.

There are now several small sugar estates, the most important of which, belonging to Don Vicente Noguez and situated on the banks of the Tebicuary River, near Villa Rica, produces from 70,000 to 80,000 arrobas (from 1,750,000 to 2,000,000 pounds) per year.

Domestic sugar has become of general use in the country, and the steady increase of its production will probably put an end to the introduction of this article from abroad.

The greatest number of the centrifugal apparatuses which are in use in the country and which give the most satisfactory results come from the United States.

MANUFACTURE OF CIGARS AND CIGARETTES.

The excellent quality of the Paraguayan tobacco, and the habit of smoking which universally prevails in Paraguay have given a great impulse to the manufacture of cigars and cigarettes.

The first cigar factory in Paraguay was established in the eighteenth century by Capt. García Rodríguez França, the father of the famous dictator, who passed into history under the name of Dr. Francia. Now there are a great many scattered through the whole country, but the most important are those established at Asunción, Villa Rica, and Itaguá.

The manufacture of cigars is now receiving a great impulse, owing to the improvement secured for the weed by the introduction of Cuban seeds.

The best cigars, comparable with the richest made at Bahía, which enjoy so much fame along the River Plata, are made at Itaguá. Samples thereof have been recently sent to Europe and the United States, and the appreciation bestowed upon them for their excellent flavor and other superior qualities is greatly encouraging.

TANNERIES.

The tanning industry is carried on in Paraguay to a considerable extent. Tanneries are numerous. The people use for this purpose the barks of many trees, such as the *quebracho*, the *curupúay*, and others, which abound in the country and contain a large quantity of tannic acid.^a

But the methods and processes in use seem to be less advanced and therefore less productive of good result than elsewhere in Europe or the United States of America. Mr. Bourgade La Dardye remarks:

It is strange for the European people not to have taken advantage of the opportunities which Paraguay offers in this respect and undertaken there on a large scale the tanning business, which can not fail to be remunerative.

FIBER.

Consul Baker, in his Report above cited on Paraguay, of December 15, 1883, says in regard to this point as follows:

A few years ago Messrs. S. B. Hale & Co., American merchants of Buenos Ayres, who own an extensive tract of land a few leagues above Asunción on the Paraguay River, undertook the preparation of fiber, not only for roping and cordage, but also for woven goods, from a native Paraguayan plant called *cará-guatá*, or wild pineapple, a species of aloes, I believe, which grows spontaneously in that part of the country. The tests which were made by experts from the United States were entirely satisfactory, the fiber being equal, if, indeed, not superior, to any that is produced in the world. * * * There is a future for this fiber equal to that which manila enjoys.

POTTERY.

The same Report says in regard to pottery:

The exceedingly fine quality of the clays of Paraguay has long been known. Indeed, almost from time immemorial the natives have produced a variety of red

^aQuebracho extract was exported from Paraguay in 1900 to the amount of 1,316,000 kilograms, representing a value of \$394,000 gold.

earthenware, consisting of water jars, crocks, pitchers, basins, piping, drain tiles, roofing tiles, flooring tiles, bricks, etc., all handmade, whose beauty is remarkable and whose durability is almost marvelous. They have found a ready sale, not only at home, but in all the neighboring countries. Last year well-known parties from England, with a large capital at their disposal, brought out all the necessary machinery for embarking in this business upon an extensive scale; and while in Paraguay I visited their works at Areguá, a station on the railway about 20 miles from Asunción. The industry promises to be a most important one for Paraguay.

The potteries of Ita produce some very curious and excellent articles.

MISCELLANEOUS.

There are in Paraguay manufactures of soap, Italian pastes (macaroni, vermicelli, etc.), artificial ice, matches, and other articles.

Gum elastic or india rubber is manufactured from the sap of a tree, very abundant in the country, called "manga-icé." The article is of excellent quality. In Villa de San Pedro this industry is carried on to a considerable extent, but in a way rather primitive. "With the investment of a little capital," says Consul Baker, "this might become a valuable addition to the manufactures of the nation, as the demand for the article abroad always insures a ready market."

Some years ago all the flour consumed in the country was imported from the Argentine Republic. Now many mills have been established and flour is exported to Brazil. One mill at Asunción, belonging to a French gentleman named Mr. Saguier, yielded in 1887 14,000 hundredweight of flour and 18,200 in 1888.

DOMESTIC INDUSTRY.

Under the auspices of the Commercial Centre the first Exhibition of domestic industry was held at Asunción in 1901. The exhibits were arranged in twelve "sections," each one of which was subdivided into smaller groups called "categorias." The following is the list of prices and exhibits:

First section.

Certificate of grand prize, or \$100.

Certificate of first prize, or \$80.

Certificate of second prize, or \$60.

Certificate of third prize, or \$40.

First category: Cloth in general.

Second category: Ponchos in general.

Third category: Blankets.

Fourth category: "Jergas."

Fifth category: Stockings, tablecloths, napkins, handkerchiefs.

Sixth category: Shirts, undershirts.

Seventh category: "Ñanduti" in general.

Eighth category: Laces in general.

Ninth category: Hammocks.

Tenth category: Sundry woolen and cotton fabrics.

Second section.

- Certificate of first prize, or \$80.
- Certificate of second prize, or \$60.
- Certificate of third prize, or \$40.
- First category: Haircloth.
- Second category: Fabrics of vegetable fiber, except hats.
- Third category: Rope, made out of hair, "ybira," or other fibers.
- Fourth category: Matting.
- Fifth category: Straw, palm leaves, reeds, and other vegetable substances.

Third section.

- Certificate of first prize, or \$80.
- Certificate of second prize, or \$60.
- Certificate of third prize, or \$40.
- First category: Brooms and brushes.
- Second category: Bone spoons, forks, and pitchers.
- Third category: Wooden forks and pitchers.
- Fourth category: "Guampa" forks and pitchers.
- Fifth category: "Guampas" combs.
- Sixth category: Sundry bone and "guampa" articles.

Fourth section.

- Certificate of first prize, or \$80.
- Certificate of second prize, or \$60.
- Certificate of third prize, or \$40.
- First category: Wooden, rattan, and leather chairs.
- Second category: Wooden articles in general.
- Third category: Rattan, tacuarembó, and güembepi articles.

Fifth section.

- Certificate of first prize, or \$80.
- Certificate of second prize, or \$60.
- Certificate of third prize, or \$40.
- First category: Sweetmeats in sirup.
- Second category: Dry sweetmeats.
- Third category: Dry fruits.
- Fourth category: Cheese and butter.
- Fifth category: Sugar.
- Sixth category: Wines.

Sixth section.

- Certificate of first prize, or \$80.
- Certificate of second prize, or \$60.
- Certificate of third prize, or \$40.
- First category: Dyes.
- Second category: Gums and sundry vegetable extracts.
- Third category: Essences.
- Fourth category: Wax and honey.

Seventh section.

- Certificate of first prize, or \$80.
- Certificate of second prize, or \$60.
- Certificate of third prize, or \$40.
- First category: Cotton fabrics.
- Second category: Woolen fabrics.

Eighth section.

Certificate of first prize, or \$80.

Certificate of second prize, or \$60.

Certificate of third prize, or \$40.

Only one category:—artificial flowers made with domestic materials.

Ninth section.

Certificate of first prize, or \$80.

Certificate of second prize, or \$60.

Certificate of third prize, or \$40.

First category: Spinning wheels.

Second category: Looms (complete).

Third category: Machinery and apparatuses of all kinds for home industry.

Tenth section.

Certificate of first prize, or \$80.

Certificate of second prize, or \$60.

Certificate of third prize, or \$40.

First category: Leather trunks and valises.

Second category: Bridles of all kinds.

Third category: Girdles for horses.

Fourth category: Saddlery in general.

Eleventh section.

Certificate of first prize, or \$80.

Certificate of second prize, or \$60.

Certificate of third prize, or \$40.

First category: Horticulture.

Second category: Floriculture.

Third category: Arboriculture.

Fourth category: Fruits in general.

Twelfth section.

Certificate of first prize, or \$80.

Certificate of second prize, or \$60.

Certificate of third prize, or \$40.

Only one category:—pottery.

Paraguay showed in this Exposition that its people are industrious and gifted with peculiar industrial aptitudes, which when properly developed will secure for the country a high degree of prosperity.

Chapter XIII.

COMMERCE.

The foreign commerce of Paraguay is principally carried on through the ports of Uruguay and the Argentine Republic, especially Montevideo and Buenos Ayres, and by way of Brazil. As the trans-Atlantic steamers and other large vessels can not navigate the Paraná or the Paraguay River as far as Asunción, the merchandise which they carry or take away has to be transshipped. Montevideo is generally preferred for this purpose, because it can be accomplished there at less expense.

Mr. Ernest Van Bruyssel, who has written with considerable success as well as accuracy in regard to Paraguay, has suggested the Paraguayan port of Rosario de Santa Fé as the best place to be used in the future for the said reshipment, thus avoiding the difficulties and troubles which the use of foreign ports necessarily entails.

It is shown by official statistics that during the period of ten years which preceded the war the exports from Paraguay, as well as the imports into its territory, never exceeded in value the figures of 1859, which were as follows:

	Dollars.
Exports	2, 199, 678
Imports	1, 539, 648

Subsequently to the war, and during the years intervening between 1880 and 1900, the movement of the foreign commerce was as follows:

	Exports.	Imports.		Exports.	Imports.
1880.....	\$1, 163, 418	\$1, 030, 408	1889.....	\$1, 720, 187	\$2, 989, 518
1881.....	1, 928, 000	1, 204, 000	1890.....	3, 901, 589	2, 725, 611
1882.....	1, 650, 000	1, 417, 311	1895.....	1, 308, 662	1, 958, 250
1883.....	1, 599, 000	1, 384, 000	1896.....	2, 830, 873	1, 888, 061
1884.....	1, 572, 000	1, 448, 000	1897.....	2, 211, 465	2, 555, 271
1885.....	1, 660, 000	1, 476, 000	1898.....	2, 608, 486	2, 463, 293
1886.....	1, 642, 000	1, 622, 000	1899.....	2, 510, 590	2, 290, 752
1887.....	2, 005, 610	2, 442, 277	1900.....	2, 555, 924	2, 652, 067
1888.....	2, 588, 000	3, 289, 000			

If these figures are studied in connection with the fact that the population of Paraguay was almost annihilated by the war, the conclusion has to be drawn inevitably that the Paraguayan people have increased

their energy and activity in almost incredible proportions, and that their efforts to regain the lost prosperity have been attended with success.

In corroboration of these statements the following paragraphs from an article published in 1894 by Señor Don José Segundo Decoud can be cited:

Paraguay is at present far more advanced, economically and financially, than at any other time in the past. The exportation of tobacco has doubled itself, and that of yerba mate is more than trebled.

In 1886, according to official data, more than 50,000,000 oranges were exported, and this is more than five times the exportation of former periods. (The oranges imported in 1901 were 114,155,620.)

The increase in all other branches of industry and commerce has also been considerable.

The revenues of the Government are at present as large as in 1862, if not larger. The Government receipts in 1892 were \$2,731,507, and the value of the exports amounted to not less than \$9,296,700 in national currency, although the country was still in the vortex of the great financial crisis of 1890, from which it has not yet entirely recovered.

The country has improved very much in the matter of facilities of communication. The railroad line is now three times longer. Paraguay has Banks, lines of street cars, telegraphs, telephones, "colonies," and a number of industrial establishments, with machinery moved by steam. It has new and beautiful public and private buildings; and while it is true that it has neither a powerful army nor a navy, or armaments, fortresses, and arsenals, it has in exchange a large number of charitable institutions, schools, colleges, universities, and libraries. Public instruction has spread throughout the whole Republic, and popular education prepares the future citizens for the conscientious fulfillment of their duties, thus constituting not only a guarantee of liberty, but a formidable barrier against despotism or anarchy. * * *

The population of the Republic did not increase to any extent during the first years which followed the termination of the great war with the allied powers of Brazil, the Argentine Republic, and Uruguay, but as soon as the normal conditions were reestablished a rapid improvement in this respect was at once noticed. * * * There are good reasons to believe that in less than five years the Republic will fully recover from the detriment which it sustained in consequence of the war.

We have ended our work. It is perfectly proven that the country has risen, with all the vigor of a young nation, under the shelter of its institutions. It is also demonstrated that its productive power is now greater than when it had a population of 800,000 inhabitants according to the statistics, or of 1,337,000 according to Dr. Gratz's calculations.

The explanation of these facts is simple and clear. Tyranny, through its oppressive action upon the life of the people, obstructs, if not prevents, the national progress. The development of the national resources and character can not under those circumstances be free and untrammelled. Liberty alone, in its various manifestations, can foster individual activity, encourage labor, and promote the due development of the sources of public prosperity. The United States afford us the most beautiful example of the power and influence of free institutions in respect to their rapid aggrandizement and progress.

The remarkable progress of Paraguay will be looked at with still greater admiration if it is remembered that in 1886, in consequence of the appearance of the Asiatic cholera at Uruguay and the Argentine

Republic, stringent measures were taken to prevent Paraguay from being visited by that scourge. The Paraguayan ports were closed to all vessels coming from the infected localities, and a great disturbance was thereby caused to the commercial movement.

In his message to the National Congress, dated April 1, 1902, Vice-President Carvalho, says:

The value of the imports and exports during the past year was \$5,532,964.42 in gold, distributed as follows:

Imports	\$3, 003, 657. 83
Exports	2, 529, 306. 59

Balance in favor of the imports	474, 351. 24
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The exports of Paraguay, by principal articles, for four years, 1888 to 1891, were as follows:

Articles.	1888.	1889.	1890.	1891.
	<i>Pesos.</i>	<i>Pesos.</i>	<i>Pesos.</i>	<i>Pesos.</i>
Cowhides.....	219, 183	234, 222	323, 244	379, 000
Railway sleepers.....	16, 990	41, 807	13, 466	-----
Timber.....	231, 269	230, 913	342, 929	270, 000
Oranges.....	59, 180	45, 884	95, 205	-----
Palm trees.....	32, 084	25, 978	52, 598	-----
Tree trunks.....	18, 000	15, 195	79, 545	-----
Tobacco.....	438, 188	481, 326	615, 310	626, 000
Yerba mate.....	1, 293, 476	976, 641	1, 251, 450	1, 352, 000

The exports of domestic products in 1901 were as follows:

Products.	Amount.	Value (gold).
Cocoanut oil.....kilos..	5, 274	\$527. 40
Sugar.....do..	7, 055	705. 50
Alfalfa.....do..	16, 370	245. 55
Pottery.....	11	11. 00
Bran of wheat.....kilos..	23, 490	704. 70
Bran of corn.....do..	3, 470	69. 40
Starch.....do..	13, 815	912. 60
Pineapples.....	400	78. 00
Sawdust.....kilos..	205, 400	2, 054. 00
Horns.....	283, 238	2, 832. 38
Cocoanuts.....kilos..	15, 650	626. 00
Bran of cocoanuts.....do..	77, 280	1, 545. 60
Wire.....do..	3, 400	374. 00
Rum.....liters..	5, 703	303. 75
Cattle.....	3, 610	25, 508. 00
Mares.....	141	1, 128. 00
Horses.....	9	72. 00
Bananas.....bunches..	4, 600	465. 00
Curupay bark.....kilos..	39, 300	265. 00
Orange bark.....do..	3, 418	85. 46
Sugar cane.....do..	1, 480	4. 44
India rubber.....do..	301	45. 15
Salted meat.....do..	744, 927	155, 155. 80
Jars.....	87	27. 80
Charcoal.....kilos..	158, 000	790. 00

Products.	Amount.	Value (gold).
Sieves	2	\$2. 00
Tallow kilos ..	168, 753	17, 351. 36
Horsehair do ..	89, 067	26, 720. 10
Beeswax do ..	54	5. 40
Cigars	18, 200	30. 60
Dry hides	104, 841	262, 102. 50
Salted hides	108, 501	385, 503. 00
Hides (desechos)	5, 153	10, 306. 00
Hides (silvestres)	27, 156	2, 719. 60
Tiger skins	30	12. 00
Colt hides	7	4. 90
"Cueros de nonatos"	100	10. 00
Shells	160	5. 20
Sweetmeats kilos ..	906	135. 90
Railway sleepers	11, 898	5, 949. 00
Brooms dozen ..	57	85. 50
Essence kilos ..	17, 834	26, 751. 00
Extract of quebracho	1, 174, 800	352, 440. 00
Tobacco-powder specific	2, 200	264. 00
Vermicelli do ..	360	36. 00
Leather waste	3, 635	72. 70
Crackers (ordinary)	6, 652	532. 16
Crackers (fine) do ..	1, 750	437. 50
Grasa de vaca	39, 980	5, 997. 01
Lard do ..	3, 668	1, 100. 40
Flour do ..	900	45. 00
Medicinal leaves	3, 228	968. 40
Bones do ..	115, 206	345. 60
Common yellow soap	25, 878	2, 070. 24
Washed wool do ..	18, 281	3, 656. 20
Unwashed wool do ..	3, 875	387. 50
Raw wool do ..	18, 648	2, 634. 18
Preserved tongues	14, 245	3, 683. 05
Hard wood meters ..	1, 147, 322	222, 586. 44
Mahogany do ..	216, 095	71, 817. 86
Peanuts kilos ..	1, 829	64. 22
Corn do ..	250, 549	5, 010. 98
"Mates"	16, 440	411. 00
"Mazas" pair ..	19	11. 40
Molasses liters ..	1, 380	27. 60
Oranges	114, 155, 820	114, 155. 82
Mandarines	343, 150	626. 80
Indian articles	-----	838. 00
Posts for buildings	210	105. 00
Palm trees	20, 503	6, 150. 90
Posts	480	4. 80
Telegraph posts	4, 500	112. 50
Hoofs	1, 999	121. 76
Plants	2, 448	612. 00
Beans "porotos" kilos ..	4, 009	120. 27
Posts	71, 285	2, 851. 40
Ostrich plumes	970	999. 00
Quebracho do ..	10, 277, 406	30, 832. 26
Medicinal roots	2, 907	961. 60
Firewood	55, 825	522. 25
"Rodados" pair ..	75	1, 875. 00
"Rollizos" kilos ..	6, 908, 714	10, 363. 09
Salt do ..	2, 500	15. 00
Seeds	20	6. 00
Tabaco pito	1, 880, 306	93, 315. 30
Tabaco pará do ..	439, 360	43, 936. 00
Tabaco curubica	14, 890	372. 28
Black tobacco	13, 952	2, 790. 40
Snuff	2, 000	240. 00

Products.	Amount.	Value (gold).
Boards .....	.....	\$7, 137. 19
Tendons	611	12. 22
"Trasillos"	1, 372	302. 00
Tomatoes baskets	16, 887	20, 264. 40
Rods	967, 256	19, 345. 12
Candles kilos	70	14. 00
Yards	217	4. 34
Yerba kilos	4, 486, 166	538, 339. 92
Yerba, ground do	256, 897	39, 929. 86
Articles not specified .....	.....	14, 278. 42

During the year 1889, Paraguay imported from Great Britain, Germany, and Italy, according to official statistics of the latter countries, and by principal articles, as follows:

Articles.	From Great Britain.	From Germany.	From Italy.
Carriages, carts, and cars	\$4, 545	.....	.....
Cotton, manufactures of .....	.....	\$3, 332	.....
Iron and steel, and manufactures of	51, 605	7, 616	.....
Jewelry and manufactures of gold and silver .....	.....	2, 142	.....
Malt liquors .....	.....	4, 046	.....
Wine .....	.....	.....	\$394, 299
Wool, manufactures of .....	.....	2, 856	.....
All other articles	12, 779	23, 562	21, 230
Total	68, 929	43, 654	415, 529

According to The Statesman's Year-Book for 1893, "the British trade (with Paraguay) passes almost entirely through the territories of Brazil and the Argentine Confederation." In 1891, as stated by the same publication, "the direct exports (from Paraguay) to the United Kingdom were nil, and the imports therefrom amounted to £362," or \$1,810.

The commercial relations between Paraguay and the Argentine Republic are in some respects extremely peculiar, and it is for this reason that some writers, as Consul Hill, for instance, have stated that Paraguay commercially is a tributary to the Argentine Republic. Nearly all the domestic products of Paraguay exported from its territory leave the Paraguayan ports destined to some part of the Argentine Republic, but no more than 1 per cent (and frequently much less) of the total foreign commerce of the Argentine Republic goes to Paraguay.

According to the Report of Consul Shaw, which has been quoted before, "with the exception of the importation of a little timber and a few agricultural implements, the trade (of Paraguay) with the United States does not amount to much." The prospects of building up a profitable commercial intercourse between the two countries are not

by any means to be abandoned. The subject is, as Consul Hill says, surrounded by difficulties of various kinds, the principal being the lack, at present, of direct communication by steamships, and the necessity, thus far experienced, of twice reshipping the goods of American manufacture sent to Paraguay, first at Rio Janeiro, and again at the mouth of the Plate.

Consul Hill says that the trade in imported eatables, wines, liquors, cotton, and woolen goods, hardware, hats, shoes, drugs, lamps, fire-arms, house furniture, and several other articles is considerable. He thinks that American articles of that kind will find a market in Paraguay, and that this matter is "worthy of more serious attention than our merchants and shippers have hitherto devoted to it." He says further:

There is not at this writing (January 23, 1889) one single dollar of American capital invested in trade, or endeavor to induce trade, in Paraguay. During my stay here one commercial traveler from the United States has made Asunción a flying visit and found no difficulty, he informs me, in securing a good bill of orders. He further states that tradesmen here, unlike those in other sections of his route, have no prejudice against novelties or new lines of trade. "The Government is stable, and bent," he says, "upon the development of the country with the aid of foreign enterprise and capital. Its cordial support may be relied on by anyone endeavoring to establish trade relations."

In Bulletin No. 41 of the Bureau of the American Republics, entitled "Commercial information concerning the American Republics and Colonies," and issued in April, 1892, the following extract from a letter of Mr. William Harrison, a merchant at Villa Rica, was published:

MARKET FOR AMERICAN GOODS.

It is a great pity that our manufactures should be shipped first to Europe and from there to South America, owing to want of means for transport, and once they have to come through that route they are no longer considered out here as being American manufactures, but as European, and the importers here send their orders for those articles to Europe instead of sending to the States.

I inclose a list of articles which I have ready markets for, but they should be of the cheapest possible manufacture:

Hats (felt), printed calico, white calico, bleached calico, cotton socks, cotton stockings, cotton undershirts, cotton white shirts, cotton cuffs and collars, mole-skins; sewing thread, hand and machine (spools); kerosene; sewing machines; oil-cloth; steel fencing wire, Nos. 8 and 9; hinges from 6 inches to 18 inches and screws to suit above; door locks; lamps; slips or tower bolts, 3 inches to 36 inches; thread for sewing bags; crockery and glassware; account paper, foolscap size; foolscap, plain, letter paper; axes, squaring and felling; loaf sugar; rice; cotton blankets, cotton rugs; aspillera (for making bags); ordinary hemp tweed (this article should weigh 10½ ounces to a yard of 40 inches width); white and colored handkerchiefs, pocket and larger size, imitation of silk; white handkerchiefs, pocket (cotton); cement; linseed oil; turpentine; ink (writing); cutlery; cooking utensils; agricultural implements; furniture; nails, wrought iron and French; weighing machines or scales; shovels; hoes; envelopes.

CHAMBER OF COMMERCE.

The statement is made with satisfaction in this place that the "Centro Comercial del Paraguay," established in 1898, has just been turned (March 19, 1902) into a Chamber of Commerce, under the name of "Cámara de Comercio de la Asunción."

The purposes of this important institution are, among others, the following:

To address to the proper authorities such petitions as may be required in the interests of the classes represented by it, whether suggesting new legislation or administrative reforms to the benefit of the said classes, or giving their opinion on the projects or schemes of the same nature referred to it by the Government or by private parties.

To promote and encourage the holding of conferences for the discussion of economical questions in general, and more particularly of those questions which may affect the march of commerce and give unity to its action; and to report to the Government and to the private parties, if any, interested in the subject the result of its deliberations.

To report what it may deem to be proper, when consulted by the authorities, by individual members of the institution, or by persons residing abroad, on matters within the scope of its functions.

To study the ways and means of creating new sources of production and trade and endeavor to put them into practical operation.

To promote and encourage the holding of commercial and industrial exhibitions.

To establish and maintain friendly relations with all commercial and industrial institutions, both domestic and foreign, and appoint correspondents.

To promote by all means, whether direct or indirect, commercial and industrial education.

This Chamber of Commerce is composed of the most prominent merchants, manufacturers, and landowners of the Republic, and is divided into several standing committees, as required by the nature of the business to be transacted by it, as, for instance, agriculture, cattle industry, domestic production, transportation, banking, exportation and importation of merchandise, manufactures, commerce by retail, navigation, legislation, etc.

A reading room and a museum of the principal products of the country are attached to it. In the former a good number of foreign newspapers and magazines can be found. The latter is a kind of permanent Exposition on a small scale of the wealth of the Republic.

A special telegraphic service keeps the members of the institution acquainted with the quotations and current prices of the stocks and bonds, etc., whether domestic or foreign, and with the price secured in foreign markets by Paraguayan products.

REMARKS ABOUT THE EXPORTS AND IMPORTS.

[From the British Consular Report for the year 1900.]

The exports from Asunción during the year under review may be estimated at £412,858, of which some of the chief items are as follows, viz:

Articles.	Value.	Shipped to—
Hides	£98, 476	Argentina and European ports. Uruguay.
Do	3, 883	
Total	102, 359	
Yerba maté, or Paraguayan tea	110, 191	Argentina. Uruguay.
Do	1, 625	
Total	111, 816	
Timber	43, 188	Argentina and thence in part to Europe. Uruguay. Brazil.
Do	8, 135	
Do	500	
Total	51, 823	
Extract of quebracho for tanning	78, 960	Argentina.
Tobacco and cigars	28, 209	
Do	7, 118	
Total	35, 327	Do. Uruguay.
Essence made from orange flowers and leaves.	1, 887	
		Principally to France via Argentina.

It is exceedingly difficult to obtain trustworthy information as to the share taken by various countries in the import trade of this port owing to the fact that the greater part of European goods are shipped out of bond from Buenos Ayres to Paraguay.

The statement may be made, however, with great confidence, that the value of the total imports during the year 1900 was £367,724, and that the approximate share borne by the United Kingdom was about £167,710. The principal articles imported from the United Kingdom and their values are as follows, viz:

Rice, tea, preserved meats, spirits, and ginger ale	£7, 312
Ironware and tools	24, 268
Crockery, porcelain, and glass	484
Steel and firearms	2, 282
Stationery	2, 828
Mercery, etc	3, 314
Perfumery and toilet requisites	1, 224
Ready-made clothes	1, 291
Hats	6, 084
Drugs and chemicals	13, 364
Dry goods, consisting of sacking cloth, linen cloth, cashmere, flannel, cotton stuffs, coarse cotton linen, and prints	102, 062
Portland cement	2, 480
Machinery (free of duty)	717
Total	167, 719

Imports from France amounted approximately to £81,519, the principal articles, with their values, being as follows:

Sugar, chocolate, sardines, etc	£15,069
Sweet wines, etc.....	17,809
Dressed skins, watches and jewels, mercery, perfumery, ready-made clothes, hats, and drugs	21,759
Dry goods, including cashmeres, merino shawls, cotton cloth, coarse cotton, linen cotton, stuffs, and sundries	26,882
Total	81,519

The value of the total imports from Germany may be calculated at £71,933, the principal items being as follows:

Washing blue, wooden matches, paper bags, fruit and vegetable seeds, candles, and sundries.....	£4,330
Beer	1,386
Wire, hardware, tools, etc.....	26,772
Lamps and globes.....	716
Crockery, porcelain, etc.....	969
Boots and shoes.....	1,142
Musical instruments.....	660
Steel and firearms.....	2,282
Stationery	2,828
Mercery.....	6,629
Dry goods, cotton and linen	23,502
Machinery	717
Total.....	71,933

Imports from Spain, consisting of tinned and preserved goods and coarse salt, amounted in value to about £5,218.

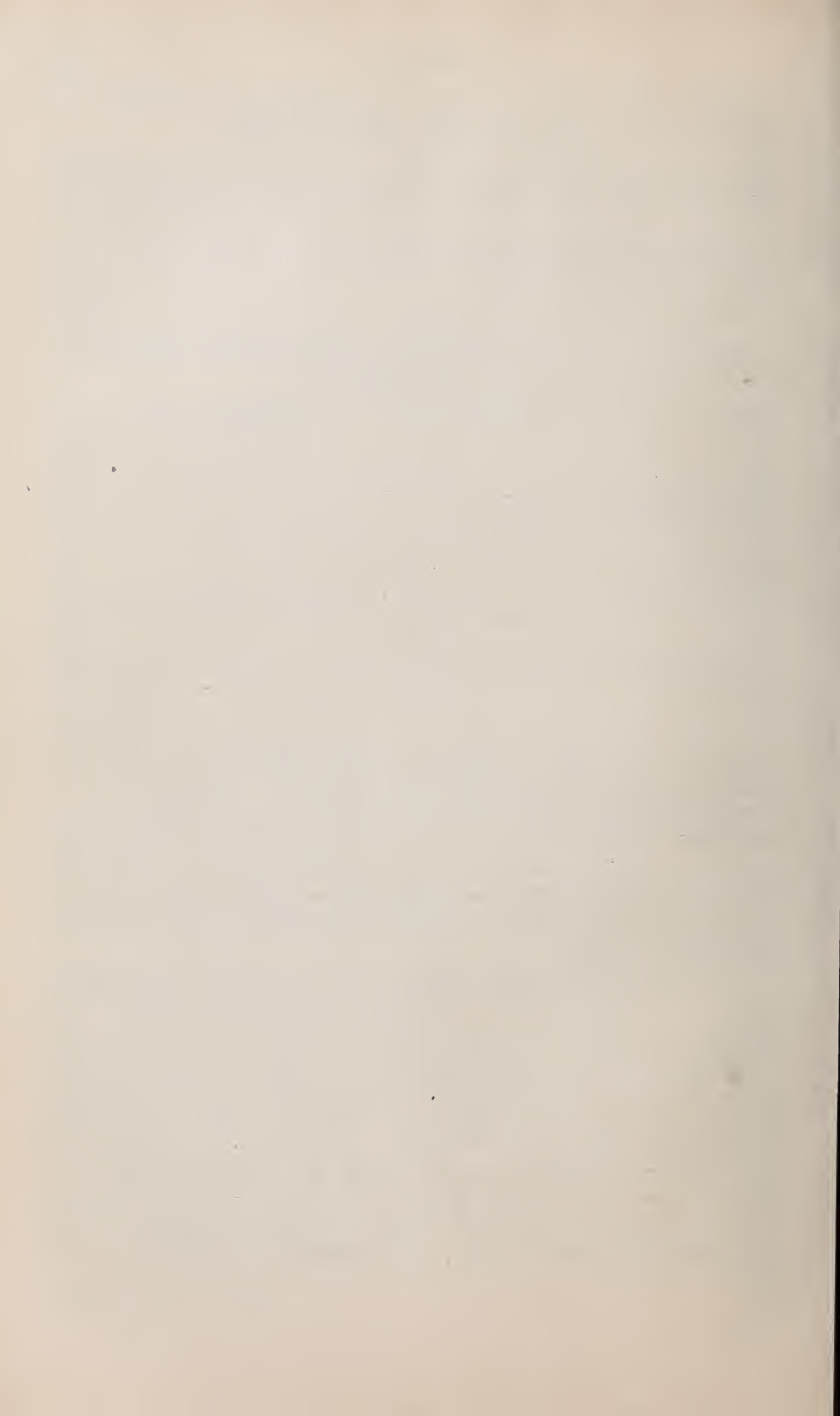
Windmills and paraffin oil were imported from the United States to the value of £8,318.

Italian imports, consisting of olive oil, cigars, preserves, wine, dry goods, and musical instruments, were imported to the value of £21,604.

The imports from Brazil, consisting of unmilled yerba and coffee, amounted to £4,942.

The preponderating share taken by the United Kingdom will appear from the preceding figures, as also the place occupied by France and Germany, namely, of second and third in the list, respectively.

Taking into consideration the fact that the bulk of the foreign trade is in the hands of Germans, and that there are at least 10 German houses established in Asunción to one British firm, this result can not be considered other than satisfactory. Nevertheless it is evident that both France and Germany are now successfully competing in goods of which ten or fifteen years ago hardly a bale of other than British manufacture was sold in the country. These articles are mainly crockery, porcelain, glass, steel, firearms, hats, drugs, and dry goods.



Chapter XIV.

FINANCIAL CONDITION.

As stated by Consul Shaw in his Report of December 14, 1891, "the Paraguayan debt, both foreign and domestic, is, perhaps, proportionately the smallest of any country in the world;" but in spite of this most favorable circumstance the financial condition of the Republic has been of late subjected to considerable embarrassments depending principally upon the serious troubles which have afflicted the Argentine markets and the other markets on La Plata River.

Prior to 1869 Paraguay had no debt, either foreign or domestic. In the struggle against Brazil, the Argentine Republic, and the Republic of Uruguay the resources of the Government were exhausted, and for the first time in the history of the country a foreign loan was negotiated in 1871. A second transaction of the same kind was consummated in the following year. These two loans, both of them negotiated at London, amounted to 3,000,000 pounds sterling (\$15,000,000), represented by bonds bearing 8 per cent interest.

The history of the vicissitudes through which this portion of the public indebtedness of Paraguay has passed is well known. Now, under arrangements made in December, 1885, by Señor Don José Segundo Decoud, special Commissioner of the Paraguayan Government, with the Council of foreign bondholders, the whole debt was reduced to £850,000, represented by bonds of £100 each.

On December 31, 1901, this debt amounted to \$4,787,077.86. The sinking fund, $\frac{1}{2}$ per cent, reached in 1900 the amount of \$24,866.04; and the reduction made through purchases of bonds in London was \$116,634.

In the Report of the Council of foreign bondholders for the year 1898-99, the following is stated:

The Council are glad to report that the Government of Paraguay has continued to make with due regularity the requisite remittances for the payment of interest on the external debt.

The export duty on yerba, which is set apart for this service, yielded in 1901 the sum of \$47,082 in gold; and to complete the sum required use was made of the general revenue.

The new arrangements, made in 1896, for the service of this debt were as follows: The interest on the 1886 bonds was to be reduced 1 per cent per annum in 1896, 1897, and 1898; $1\frac{1}{2}$ per cent per annum in 1899, 1900, and 1901; 2 per cent per annum in 1902, 1903, and 1904, and $2\frac{1}{2}$ per cent per annum in 1905 and 1906. From 1907 to the extinction of the debt the reduction in the interest will be 3 per cent.

A sinking fund was provided of $\frac{1}{2}$ per cent per annum, to begin January 1, 1900.

In addition to this debt, which does not cause Paraguay any practical embarrassment at all, there are the so-called Brazilian and Argentine indemnities, amounting on the 31st of December, 1890, with accrued interest, the former to \$9,876,466 and the latter to \$9,563,990.

These Brazilian and Argentine indemnities were the result of the war.

The Republic of Uruguay, by treaty of April 30, 1883, magnanimously waived her claims to indemnity, and shortly afterwards returned to Paraguay the Paraguayan battle flags and trophies which had been taken from her during the war.

No other foreign debts than those described are due by Paraguay. But there is a domestic or internal debt, represented by bonds bearing 9 per cent per annum, which on the 31st of December, 1901, had been reduced to \$827,300 in the paper currency of the country. For the service of this debt \$429,444.39 were expended in the year last named.

A fact worthy of mention is that the whole amount of paper currency in circulation on December 31, 1901, represented \$10,566,171.19, and that during 1901 not less than \$775,154 worth of this paper was redeemed.

From the report of the Council of foreign bondholders above mentioned the following must be quoted:

Land warrants.—These were issued in the proportion of 830,000 square varas—about 145 acres—of land to each holder of £100 nominal value of unpaid coupons.

The Paraguay Land Company was formed (1888) to deal with the land warrants with a capital of £250,000, in shares of £5. The Company issued two fully paid shares for each £100 warrant. The warrant holders provided capital in the form of 5 per cent debentures to the amount of £61,710. The name of the Company was altered in 1889 to that of Anglo-Paraguayan Land Company. It has since been reconstructed and the capital reduced.

Chapter XV.

GOVERNMENT REVENUES AND EXPENSES.

The revenues of Paraguay are mainly derived from the following sources:

- (1) Customs duties levied on imports and exports.
- (2) Port dues, warehousing, and other local charges on vessels and merchandise.
- (3) Sales and leases of public lands.
- (4) Land taxation.
- (5) Internal revenue, in the shape of stamps, stamped paper, licenses, patents, etc.

IMPORT DUTIES.

Under the Paraguayan law of September 21, 1899, which is still in force, all foreign merchandise imported into Paraguay, not in the free list, is subject to duties ranging from 2 to 80 per cent ad valorem, the value to be fixed in accordance with a schedule of appraisement (*tarifa de avalúos*) framed for that purpose by a committee of merchants at Asunción. The values given by this schedule form the basis upon which the custom-house authorities make their calculations and regulate the duties to be paid in each case. Mr. Van Bruysel says that it is safe to state that the value of the merchandise as given in the schedule is always about 20 per cent less than the real actual value.

Articles paying 2 per cent:

Steel in bars, plates, or ingots; copper in bars, plates, or ingots; iron in bars, plates, or ingots; precious stones and fine pearls, loose.

Articles paying 5 per cent:

Jewelry of gold or silver, with or without stones or pearls; needles for sewing machines; scientific instruments, with or without handles ornamented with gold, silver, or platinum; sewing machines, shovels, picks, Portland cement; gold or silver watches, with or without stones or pearls; silk for sewing or embroidering, wheat, utensils of gold or silver.

Articles paying 15 per cent:

Burlaps, tin (stannum) in bars or ingots, matting, axes, iron hooks (*horquillas*), tin plate, unwrought; refractory bricks, zinc plates up to No. 4, zinc, cut and prepared to make boxes, zinc in bars or ingots, common salt.

Articles paying 20 per cent:

Bullets, shot, and ammunition for hunting purposes; smooth galvanized iron, gutters of galvanized iron, flour, hops, malt, marble (unpolished) for furniture and for building purposes, common gunpowder.

Articles paying 25 per cent:

Ordinary cap sporting guns and caps therefor; twine, cotton bed covers, printed cotton goods for dress or shirts, shawls or ponchos of cotton; cotton handkerchiefs, scarfs, and shawls; calicoes, fine powder, pita, jute or hemp for making matting; ordinary hats called "de petate," hats of viruta, junco, or wool, woolen caps, oil-cloths of all kinds, and unbleached cotton sheeting.

Articles paying 35 per cent:

All those which are not on the free list or are not subject to other duty.

Articles paying 40 per cent:

Animal, vegetable, and mineral oil, with the exception of petroleum; sacks made of cotton or pita; glass of all kinds; printed books with covers of tortoise shell, mother-of-pearl, ivory, their imitations, or with incrustations of gold, silver, or plated metal, or fine gilding; cloth for billiard tables, porcelain, hats of classes not named in this law; tissues and all articles of silk not specified in this law, pure or mixed with some other material; veils in general for ladies; common wines in casks, and felt hats.

Articles paying 55 per cent:

Lucern, firearms and barrels for the same, excepting the classes mentioned in this law; pepper (*aji*), crude or ground; garlic, canary seed; rice, shelled or unshelled; fabrics of all kinds, valises, trunks, portmanteaus, and traveling satchels; vetch and other dried vegetables; walking sticks with swords; coffee, ground and in grain; boots and shoes in general, made up or in pieces; onions, beer, in any receptacle; cigars and cigarettes of all classes; skyrockets, fireworks, and bombs; tanned hides, skins; alcoholic beverages in any receptacles; confectionery, sweets not medicinal, brooms, biscuits, "farina," maize, on the cob or shelled; peanuts, butter, lard, billiard tables and their accessories; saddles, saddle cloths, belts, overgirdles, and all articles pertaining to horses, made up or ready to be made up; furniture, complete or in pieces; potatoes; trimmings and cords of pure or mixed silk, with or without metallic thread; perfumery in general, cheese, snuff, ready-made clothing; tobacco in leaves or cut, black or natural; bottled wine, port, Jerez, Madeira, Muscatel, Nebiolo, Manzanilla, and sparkling wines; matches of all kinds, and blank books for commerce.

Articles paying 70 per cent:

Sugar of every description.

Articles paying 80 per cent:

Brandy up to 70° in receptacles of all kinds, caña in whatever manner put up, and playing cards.

In addition to the above duties all foreign merchandise imported into the Republic has to pay a surtax of 1 per cent. (Law of November 18, 1899.)

The following articles are subject to specific duties:

Bullocks, 50 cents, gold, per head; foreign yerba mate, of the *mboroviré* brand, 15 cents per 10 kilograms; and foreign yerba mate, ground, 13 cents per 10 kilograms.

The following articles are admitted free of duty:

Telegraph wire, breeding cattle in general, plows, spades, mining drills, bicarbonate of soda (impure), tar, fire engines and accessories thereof, common empty bottles holding at least half a liter, switches, iron pipes of at least 65 millimeters (3 inches) in diameter, neither tinned nor galvanized, for gas or water conducts, tubes of 35 millimeters or more in diameter, used for making beds; coal, carbon of calcium, barley without husks, soda ash and calcined soda, cross-ties for railroads, empty demijohns, staves, remedies for cattle, fruits and fresh vegetables, globes, hooks for wire fences, mowing scythes, immigrants' tools, furniture of little value; scientific instruments, with the exception of those whose heads are adorned with precious metals; printed books, with the exceptions indicated; locomotives, machetes, geographical maps, machinery, and pieces belonging thereto for agricultural and industrial establishments and for steamboats, materials and utensils used exclusively for printing and lithography, turntables, printed music, naphtha (impure) for combustion, windmills, religious objects, fresh fish; plants, or branches of the same, to be cultivated; gold and silver in nuggets, ingots, or dust, blasting powder, rosin for soap manufacturers; wheels, with or without axles, for railroads; cart wheels for industrial and agricultural purposes, steel and iron rails, seeds not to be used as food; silicate of soda, liquid or dry, for use in the arts; sulphate of copper, crude for agriculture; rock salt for cattle-rearing establishments, Roman cement, tourniquets; fence-wire stretchers, wire fence, of iron or steel, galvanized or not galvanized, to No. 14, inclusive; barbed iron or steel wire for the same purpose. Also bicycles of all kinds, and carriages and carriage harnesses.

EXPORT DUTIES.

All the products and manufactures of the country will be free of export duty; except those detailed below—payable in gold:

	Gold pesos.
Oxhides, dry or salted	each.. 0.25
Oxhides, called "desechos"	do.... .30
Tobacco leaf	per 10 kilograms.. .05
Yerba mate:	
Leaf	do.... .15
Ground	do.... .13

Foreign merchandise will not pay export duty.

The payment of the duties is to be made cash, in gold or in the currency of the country, at the official rate weekly published by the Treasury Department.

Articles intended for consumption in the yerba fields introduced through the custom-house at Villa Encarnacion are allowed a reduction of 25 per cent of the duties, and those introduced by the custom-house of San José 10 per cent; also sewing needles, hemp sandals in general, tar, sacks of crude agave, unrefined sugar in bags, hatchets, iron buckets, gimlets, baize, cloth "estrella" of wool or mixed, tin tubes (for sucking mate tea), buttons of horn, glue, paste, bone, cocoanut, wood or "carose" for vests, pantaloons, coats, fire pans, bramante, madapolams, cotton domestics, hooks of metal for dresses, axles for carts, small tin caldrons; cotton shirts, white or of colors, ordinary; cotton shirts called genoese, for men; cotton undershirts and shirts, plain, called Crimean, ordinary, for men; chairas, iron nails, single or double barreled shotguns, chisels, iron spurs, iron stirrups, flannels, tartans or cotton

flannel, woolen and cotton covers for beds, iron bits, printed cotton goods for dress or shirts called brin, oxford, drill, cambric; twine, common yellow soap, tin jars, coarse cloth of cotton, cotton shawls or ponchos, hunting ammunition, iron pots of 3 feet without tops, shovels, cotton handkerchiefs, iron tailor goose, percales or calicoes, chintz cotton for dresses, pikes of steel and iron in general, whetting stones, common powder for hunting, silver plates or zinc stamps, iron brushes or curry-combs for horses, scales for weighing up to 34 kilograms, common salt, handsaws in general, trowels; hats called woolen or mixed, ordinary, for men; common wine in caskets.

The customs duties collected from 1899 to 1901 are as follows:

	Gold.
1899.....	\$5, 887, 634
1900.....	8, 308, 376
1901.....	9, 930, 348

About \$330,000 (in gold) worth of goods are yearly imported free from duty in Paraguay. About 48 per cent of these free articles are sent by Great Britain; the balance is divided between all foreign nations in the following order: France, Italy, Germany, Spain, the Argentine Republic, Uruguay, and Belgium.

Custom-houses are established in the ports of Asunción, Villa Concepción, Villa del Pilar, Villa Humaita, Villa Encarnación, San José-mi, San Pedro, Rosario, Villeta y Paso de la Patria.

PORT DUES AND CHARGES.

The port dues charged in Paraguay are chiefly the following:

Tonnage for ships from 5 to 20 tons burden, \$10; from 21 to 30 tons, \$15; from 31 to 40 tons, \$20; from 41 upward, at the rate of \$0.50 per ton.

Ships flying a foreign flag pay 40 per cent additional.

Permits for the clearance of ships of 200 tons require a fee of \$25, and \$0.20 additional are paid for each ton in excess of 200.

Eslingage, or special port dues, are charged at all the ports, on every article of merchandise, whether imported or exported, at the rate of 1 cent in gold for each 10 kilograms; but the following are excepted:

Articles which have been landed or shipped without making use of the docks: Animals for breeding purposes, flat stones or slabs, lime, sugar cane, coal, charcoal, fruits, horns, bones, bricks, lumber (beams, boards, etc.), steam engines, molasses, living plants, vine branches for planting purposes, building stones, limestone, tiles, and pottery.

There are no pilot, anchorage, or light-house charges.

This branch of the public revenue yielded in 1900, \$470,053 in paper currency.

SALES AND LEASES OF PUBLIC LANDS.

The land law of 1885, which is given in the Appendix, imparted great activity to the sale and lease of public lands, and contributed considerably not only to the agricultural development of the country, but also to the increase of the national revenue.

The whole revenue out of both sales and leases in 1891 was \$190,328.10 and in 1892 \$371,340.47.

In subsequent years, however, this revenue has decreased, owing to the fact that almost all the "yerbales" and public lands had been sold. In 1900 it only yielded \$30,987.50.

DIRECT TAXATION.

The law establishing a direct tax in Paraguay, printed in this handbook as Appendix No. 6, was passed on December 22, 1890.

This taxation yielded \$248,000 in 1900, and about the same sum in 1901. It is estimated that it will yield in 1902 (Report of the Bureau of Direct Taxation) in the neighborhood of \$400,000.

INTERNAL REVENUE.

According to the message of Vice-President Carvallo the receipts from the internal revenue in 1901 were \$1,220,246.97 gold.

This revenue consists of patents, or licenses, for commercial houses, stamped paper, and revenue and postage stamps, and taxes on the transfer of property by sale or inheritance, and others of minor importance.

The patents, or licenses, of commercial houses yield, on an average, about \$12,000 a year.

The taxes called "registration of property tax" and "recording of mortgages tax" yielded \$15,716 in 1901.

Ever since the 1st day of January, 1900, a revenue stamp has to be affixed to certain imported articles, the value of said stamp being determined according to a special tariff. The articles most directly affected by this tax are groceries and eatables, wines and liquors of all kinds, articles of perfumery, cigars and cigarettes, matches, stearic candles, stills for making "caña" (sugar-cane brandy), etc. (Law of September 24, 1899.) The receipts from this tax are set apart, as others, to meet the expenses of public instruction.

Telegraph and postal receipts amounted in 1901 to \$181,128.85 in gold.

RECAPITULATION OF GOVERNMENT RECEIPTS.

The Government receipts in 1901 were as follows:

Customs	\$9, 930, 348. 41
Internal revenue	1, 220, 246. 97
Post-office and telegraphs	181, 128. 85
Registration of property	10, 736. 40
Mortgage-recording tax	4, 980. 10
Direct taxes	65, 306. 25
Total	11, 412, 746. 98
The amount collected in 1900 was	9, 856, 063. 02
Difference in favor of 1901	1, 556, 683. 96

ESTIMATE OF GOVERNMENT EXPENSES.

The estimate of Government expenses for 1902 is as follows:

Department of the Interior	\$1, 846, 567. 92
Department of Foreign Relations.....	93, 540. 00
Department of the Treasury	2, 469, 663. 24
Department of Justice, Worship, and Public Instruction	3, 014, 640. 08
Department of War and the Navy	645, 852. 00
Miscellaneous expenses.....	947, 916. 00
Total.....	9, 018, 179. 24

All sums above given, representing receipts and expenditures, are in the national currency of Paraguay.

Chapter XVI.

NAVIGATION AND RIVER SERVICE.

Navigation is very active in the Paraguay River, and the spectacle is often seen of not less than 40 vessels anchored at Asunción at one time, flying the flags of nearly every nation of Europe and America.

The following information on this subject, furnished by Consul Shaw, will be found of interest:

In 1888 no less than 1,620 steamers and 2,612 sailing vessels, with a total tonnage of 181,054 tons, entered the ports of Paraguay. Out of this number 1,642 came loaded and 2,590 in ballast. They also brought 20,459 passengers.

In 1890 the arrivals were: Steamers, 1,663; sailing vessels, 1,287. The tonnage was 176,692. The vessels loaded were 694; those in ballast, 1,812. Passengers carried, 12,658.

In 1900 the arrivals in the Paraguayan ports were: Foreign steamers, 2,002; foreign sailing vessels, 994; Paraguayan steamers, 958; Paraguayan sailing vessels, 384. The tonnage was 535,246. Passengers, 18,193.

The flags carried by these vessels were, according to numerical importance, the Paraguayan, Argentine, Brazilian, Uruguayan, German, and English.

Says Consul Hill:

The United States flag is unknown in this part of the world. During a residence in Asunción of the greater part of a year I have never seen the Stars and Stripes upon the river save on the passenger boat which brought up the American minister in April last.

The river service by steamboats is excellent.

The steamboats of the Don Nicolás Mihanovich Company, established in 1896, rank first. This Company purchased the whole fleet of the old one called "La Platense," and owns at present 92 steamers and 98 sailing vessels and lighters. Out of the steamers there are 8 magnificent in all respects, which ply between Asunción and Buenos Ayres. Three others do service between Asunción and Corumbá. And there are 2 which navigate the Upper Paraná River, leaving Corrientes and touching several Argentine ports until reaching Posadas, opposite Villa Encarnación.

The trip from Buenos Ayres to Asunción takes five or six days. The steamers doing this service have electric light, and are elegantly furnished with everything required for comfort and safety. Consul Hill says that they are "in many respects equal to the best Mississippi River boats."

The agency of Messrs. Vieri Brothers also carries on a similar service by means of 4 steamers plying between Asunción and Coimbra. The North German Lloyd and the Bremen Nordeutscher Lloyd, whose steamers ply between Buenos Ayres and Bremen, have an agent at Asunción, who is now Don Enrique Plate, Florida street, No. 74.

The steamship agency of Messrs. Croskey & Co. has now 5 steamers for passengers and freight, 4 of which ply between Asunción, Buenos Ayres, and Montevideo, and one between Asunción and Villa Concepción.

The maritime agency of C. Sagnier & Bro. owns 16 steamers, for passengers and freight. Some of them ply between Asunción and Buenos Ayres. Some others are engaged only in the transportation of oranges, and the rest ply between Corumbá and the Brazilian port of Murtinho.

The maritime agency of Alfredo Zuanny owns 2 steamers and several sailing vessels, and the agency of Oneto & Co. has 1 ship of each kind.

The Brazilian Lloyd has under its charge the following ships, all of which carry the Brazilian flag, namely: *Ladario*, *Diamantino*, and *Rapido*, which ply between Montevideo, Corumbá, and intermediate ports. This company is subsidized by the Government of Brazil, and successfully competes with the other lines. The trips of their ships are made monthly.

The freight rates from Asunción to Buenos Ayres in 1902 are \$4.34 per ton, and the passenger fares \$23.91.

In addition to the ships of these regularly organized Companies there are numbers of private steamers which make trips more or less regularly between both ends of the line. It may be said that a steamer leaves one port or the other every other day.

Consul Hill says that the question of direct communication with Europe has been much agitated in Paraguay during the last year. He says:

It is recognized by all intelligent men that this direct communication is something vital to Paraguay's prosperity, and perhaps to its long-continued existence as an independent State. Unless this is solved favorably, Paraguay will always be dependent upon the Plata Republics, which control its only outlet, and in whose power it lies to hamper or to destroy her commerce by direct or indirect taxation. The cost of reshipment from the ocean liners to the river boats at Montevideo and Buenos Ayres adds much to the cost of freights and renders all imports much higher than the same articles landed at Rosario.

Chapter XVII.

RAILROAD, TELEGRAPH, TELEPHONE, AND POSTAL SERVICES.

RAILROADS.

The only railway at present in operation in Paraguay is the *Paraguayan Central*.

Capital invested up to April 30, 1899, £1,453,082. The Republic guarantees 6 per cent of the purchase price of the railway from Asunción to Villa Rica (93 miles), and like rate on \$30,000 per kilometer of construction beyond that place. Working expenses for purposes of guarantee are fixed at 65 per cent of gross receipts.

This company was formed to acquire and work the Government railway from Asunción to Villa Rica, and to extend the same from the latter place to Villa Encarnación, a further length of 136 miles. The railway in 1892 was open to Pirapó, 50 miles beyond Villa Rica. The purchase price was, as far as Villa Rica, \$2,100,000, half cash, half in 6 per cent preference shares.

Opposite Villa Incarnación is Posadas, the terminus of the Argentine Northeastern Railroad.

Freight is now paid at the rate of \$0.10 (1 cent in gold) every 10 kilograms for 100 kilometers.

Passengers pay per kilometer, as follows: First class, \$0.96; second class, \$0.60; third class, \$0.30, all in paper currency, or 9.6, 6, and 3 cents in gold, respectively.

The number of miles of railroad in operation is as follows: First section, from Asunción to Paraguari, 45 miles; second section, from Paraguari to Villa Rica, 48 miles, and from Villa Rica to Pirapo, 62 miles; total, 155 miles.

The number of passengers carried by this railroad in 1900 was 624,741; tons of merchandise transported, 75,503; gross receipts, \$1,568,037.

STREET RAILWAYS.

Consul Shaw says:

In June, 1892, work was commenced extending the main line of the tramway from Villa Morra, a suburb of Asunción, to San Lorenzo, a distance of 9 miles. Mr. Ogilvie, an Englishman, the owner of the line, purchased two engines from the Porter

Car Works, Pittsburg, Pa., of 13 tons each, which are now in satisfactory working order; also six English engines and coaches. The line will be completed within six months, and run by steam from the railway station in Asunción to San Lorenzo, a distance of 9 miles, opening up an excellent agricultural district and giving the people of Asunción a mode of rapid transit, which has been a long-felt want. From the railway station, connecting with the steam line, under the same management, are horse trams running in all directions along the principal streets, with a service second to none in South America.

The service of street-railway lines from Asunción to Villa Morra, Tacumbu, Trinidad, and San Lorenzo is now effected with the greatest possible regularity, and the traffic is daily increasing.

TELEGRAPHS.

There are two telegraphic lines which start from Asunción, one southward to Paso de la Patria, and the other northward to Villa Concepción. These are Government lines, the total length of which is 679 kilometers 810 meters.

A branch of the northern line joining it with Arroyos y Esteros has just been opened to the public.

The Paraguayan Central Railroad has a telegraphic line of its own.

A contract has been recently entered into between the Government and some private parties to run a wire from Asunción to Curupaity, and from there lay a cable across the river Paraguay, so as to connect the Paraguayan line with that of the Argentine Republic at El Chaco.

Telegraphic communication between Paraguay and the rest of the world can now be effected with regularity, and almost directly, by means of a cable across the Paraguay River, which connects Franca Nueva on the Paraguayan territory with the above-named Argentine line of El Chaco.

The following telegraphic lines are either under construction or contemplated:

	Kilometers.
From Villa Concepción to Bahia Negra, connecting at Puerto Murtinho with the Brazilian line	519
From Asunción to Ypané (contemplated)	25
From Ypané to Guarambaré	8
From Guarambaré to Ytá	6
From Ytá to Yaguarón	12
From Yaguarón to Carapeguá	24
From Carapeguá to Acahay	21
From Acahay to Guindy	14
From Guindy to Ybicuy	24
From Ybicuy to Caapucú	36
From Caapucú to Quiquió	25
From Quiquió to Villa Florida	30
From Villa Florida to San Miguel	16

	Kilometers.
From San Miguel to San Juan	36
From San Juan to Santa María	36
From Santa María to San Ignacio	16
From San Ignacio to Santiago	32
From Santiago to San José-mí	36
From San José-mí to San Cosme	44
From San Cosme to Villa Encarnación	44
From Emboscada to Arroyos y Estero (contemplated)	28
From Arroyos y Esteros to Caraguatay	40
From Emboscada to Altos	22
From Altos to Atirá	8
From Atirá to Tobatí	10
From Tobatí to Barrero Grande	20
From Barrero Grande to Ytacurubí	32
From Ytacurubí to San José	12
From Atirá to Caacupé	13
From Caacupé to Piribehuy	12
From Piribehuy to Valenzuela	22

The telegraphic movement in 1900 was as follows:

	Number.	
Telegrams received from abroad	25, 075	
Telegrams sent abroad	23, 267	
		48, 342
Telegrams received from the interior	17, 985	
Telegrams sent to the interior	17, 233	
		35, 218
Total		83, 560

The telegraphic movement in 1901 was 97,044.

TELEPHONES.

Mr. Shaw says:

And last, but not least, is the telephone system, which has proved a grand success, not only rendering important service to the business men, but bringing the suburban towns in close communication with the capital. Each person desiring a telephone pays a fee of \$25 (paper) for placing his name on the list and \$10 (paper) per month. At the present rate of exchange (September, 1892), with a tendency to rise, it is seen at a glance that the service is exceedingly cheap.

At present the stores and commercial houses pay for the telephonic service at the rate of \$15 per month in the paper currency of the country. Private residences pay only \$12.

The total length of the telephone line is 500 kilometers.

The railroad has established a telephonic service of its own, connecting the different stations as far as Sapucay. The length of this line is 91 kilometers.

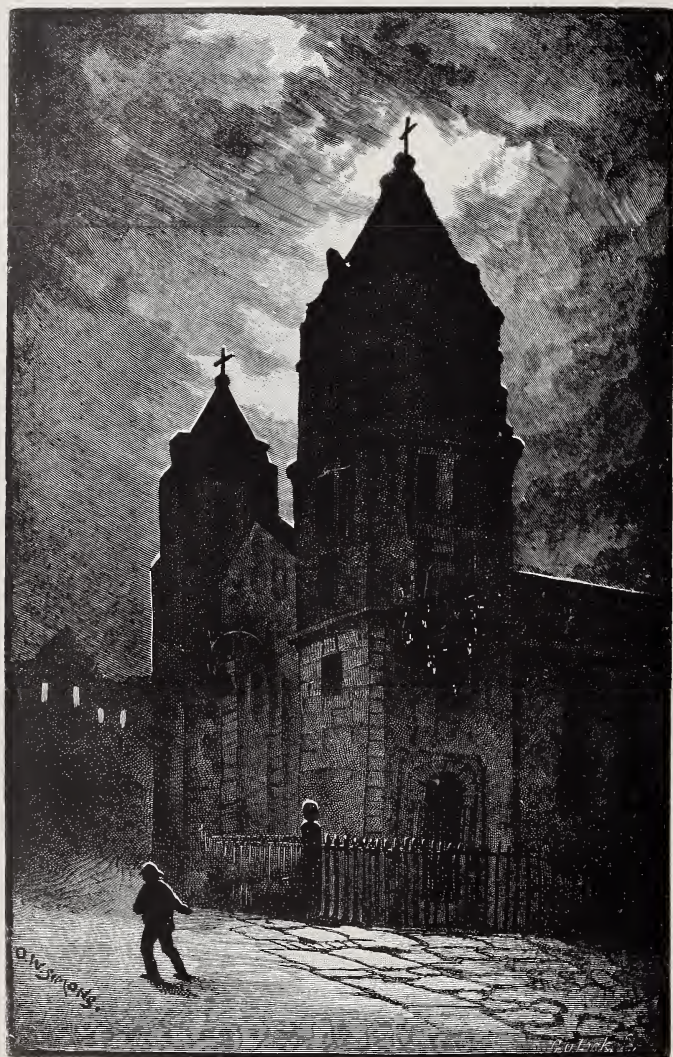
Between Ipacaray (at the Tacuaral station) and Caacupé there is also a telephonic line, 20 kilometers in length, and another in Villa Concepción.

POSTAL SERVICE.

The postal movement in Paraguay in 1900 was as follows:

	Pieces.	
Postal matter received from abroad.....	371, 698	
Postal matter sent abroad.....	256, 007	
	<hr/>	627, 705
Postal matter received from the interior	199, 498	
Postal matter sent to the interior.....	902, 675	
	<hr/>	1, 102, 173
Total.....		<hr/> <hr/> 1, 729, 878

In 1901 the postal movement was 2,099,640 pieces.



THE CATHEDRAL AT ASUNCIÓN.

Chapter XVIII.

RELIGION, PUBLIC INSTRUCTION, CHARITABLE, AND OTHER INSTITUTIONS.

The religion of the State is the Roman Catholic Apostolic, but the free exercise of all other forms of worship is allowed.

The Paraguayan hierarchy consists of 1 Bishop, residing at Asunción and 6 Curates, or pastors, in the capital, and 38 in the country parishes.

Primary instruction for children of both sexes is compulsory since the 1st day of November, 1881. The Spanish language, which is the official language of Paraguay, is taught in all the schools. The Guaraní language, which is generally spoken among the masses of the people, especially in the country, is gradually disappearing. It is now prohibited within the precincts of the Colleges and the University.

The management of primary schools is intrusted to the National Council of Education.

High schools and colleges depend upon another council, called *Consejo Secundario y Superior*, consisting of seven members, whose term of service is four years.

The power to appoint professors in the University and Colleges is vested in the President of the Republic, but the power to nominate them belongs to the respective Councils.

In 1901 the schools of Paraguay were as follows:

Normal schools	2
High schools.....	15
Primary schools.....	245
Private schools.....	107
Agricultural schools	1
Total	370

The aggregate attendance at these schools was 25,247.

The amount appropriated for the support of the national schools in 1902, not including the School of Agriculture, was \$1,416,000.

The School of Agriculture and the model farm cost per year \$144,000.

There are five Colleges supported by the Government, namely, one at Asunción, another at Villa Rica, and the other three at Villa Concepción, Villa Encarnación, and Villa del Pilar, respectively.

The National University, at Asunción, is a first-class establishment, ranking as high as any other of its kind. It was founded in 1890, on motion and through the efforts of Don José Segundo Decoud, who at the time was a member of the Senate and introduced a bill for its creation. The bill met with opposition, but it was finally passed.

This University has four faculties, as follows: Law and social sciences, Medicine, Mathematics, and Notarial training.

Acting President Carvallo, speaking of the University in his message of April 1, 1902, said that it is constantly improving and increasing the intellectual standard of the country, and doing thereby a great benefit to the social body.

The funds appropriated to defray the expenses of the Colleges and high schools amount to \$732,000 per year.

The attendance at the University and national Colleges is 690.

The library attached to the University at present consists of 2,500 volumes.

The most notable among the private schools are:

The *Instituto Paraguayo*, with 12 professors and 335 pupils.

The *Salesian College of Arts and Trades*.

The *San Luis College*.

The Young Ladies' Schools, called *Providencia* and *María Auxiliadora*, conducted by Sisters of Charity and Salesian Sisters, respectively.

The National Library was founded in 1871 through the initiative of Don José Segundo Decoud, ex-Secretary of Public Instruction. It has now its own building and over 6,000 volumes.

There are now at Asunción a Hospital called of San Vicente, an Orphan Asylum, and a Home for the Poor, all supported by the Government and conducted by charitable associations, formed in great part by the most distinguished ladies of Asunción society.

Other important institutions are the National Council of Hygienics, the National Vaccination Conservatory, and the Bacteriological Institute inaugurated in 1900.



VILLA VENECIA.

Chapter XIX.

MISCELLANEOUS INFORMATION.

CURRENT PRICES OF PRODUCTS, ETC., PREVAILING DURING THE MONTH OF JANUARY, 1902, IN THE MARKETS OF ASUNCIÓN.

[NOTE.—Prices are given in paper currency except where otherwise noted. Exchange price of gold, 925 per cent.]

Oil of the castor bean ....kilo..	\$1. 20	Wheat flour "00" brand, 90	
Oil of peanut.....do.....	2. 40	kilos.....	\$ 54. 00
Oil of coco.....do.....	1. 00	Wheat flour "0" brand, 90 kilos	46. 00
Native alcohol.....liter..	1. 80	Soap, common.....10 kilos	6. 50
Luzerne.....10 kilos..	1. 50	Wool:	
Wheat bran.....do.....	1. 60	Washed.....do.....	18. 50
Coco husks.....do.....	. 80	Unwashed.....do.....	6. 50
Unginned cotton.....do.....	4. 00	Peanuts.....do.....	3. 00
Ginned cotton.....do.....	13. 00	Indian corn:	
Hulled cocoanuts.....do.....	3. 50	Yellow.....do.....	2. 00
Mandioca starch.....do.....	5. 00	White.....do.....	2. 00
Horns.....each.....	. 25	Hardwood timber, 10 by 10, per	
Bananas.....bunch.....	. 80	vara.....	3. 50
Paving tiles, native make, first		Oranges.....per 10,000..	20. 00
quality.....per 1000..	150. 00	Mandarins.....do.....	60. 00
Paving tiles, native make, sec-		Beans.....10 kilos.....	2. 50
ond quality.....per 1000..	100. 00	White heron feathers (Garza),	
Stone.....cubic meter..	16. 00	per kilo.....	\$500-800. 00
Bricks.....per 1000..	50. 00	Ostrich feathers.....kilo..	12. 00
Roofing tiles.....do.....	150. 00	Palms.....each.....	4. 50
Roofing tiles, small.....do.....	60. 00	Posts.....do.....	5. 00
Lime.....10 kilos.....	1. 30	Quebracho logs...per ton, gold..	4. 00
Caña (native liquor) ..10 liters.	5. 50	Tomatoes.....per ½ bu. basket..	10. 00
Horsehair.....kilo.....	3. 30	Castor-oil nut:	
Cedar lumber.....sq. meter..	. 80	With shell...per 10 kilos..	1. 30
Curupay bark (for tanning),		Without shell.....do.....	2. 00
10 kilos.....	. 80	Leaf tobacco (11½ kilos):	
Dry hides.....kilo.....	2. 30	Pito.....	\$4. 50- 5. 50
Salt hides.....do.....	1. 25	Medium.....	5. 00- 6. 00
Fresh hides.....do.....	1. 00	Regular.....	5. 00- 6. 50
Otter skins.....do.....	4. 00	Good.....	6. 00- 7. 00
Carpincho skins.....each..	2. 50	Double.....	6. 50- 8. 00
Deerskins:		Pinton.....	9. 00-12. 00
With hoofs.....10 kilos..	23. 00	Para.....	10. 00-17. 00
Without hoofs.....do.....	25. 00	Lapacho strips, 1½ by 2..per 1,000..	380. 00
Orange leaf essence.....kilo..	18. 00	Curupay strips, 1½ by 2...do....	304. 00
Yerba:		Ibirapita strips:	
Mborovire.....11½ kilos..	12. 00	Long.....do.....	228. 00
Ground.....kilo.....	1. 40	Short.....do.....	133. 00
Extract of quebracho, per ton,		Lapacho strips, 1½ by 1½..do.....	247. 00
gold.....	80. 00	Window sash, lapacho...meter..	. 27
Hoofs.....100 kilos, gold..	2. 00	Joists, lapacho, 3 by 5....do.....	1. 30
Bones.....do.....	3. 00		

Rate of exchange and quotations during the first half of January, 1902.

Date.	Gold coin in the market.	Argentine paper.		Brazilian paper—cash.	Drafts in gold—					Gold—commercial center.	Gold—custom-house.
		Cash.	Drafts.		On Buenos Ayres.	On Montevideo.	On England.	On Germany.	On France.		
Jan. 2....	930	390-395	390-395	450-460	925	995-997	935	930	930	922	925
3....	930	390-395	390-395	450-460	925	995-997	935	930	930	922	925
4....	930	390	390	450-460	925	995-997	935	930	930	925	925
6....	930	390	390	450-460	925	995-997	935	930	930	925	925
7....	930	390	390	450-460	925	995	935	930	930	925	925
8....	930	390	390	450-460	925	995	935	930	930	925	925
9....	930	390	390	450-460	925	995	935	930	930	925	925
10....	930	390	390	450-460	925	995	935	930	930	925	925
11....	930	390	390	450-460	925	995	935	930	930	925	925
13....	930	390	390	450-460	925	995	935	930	930	925	925
14....	930	395-400	395-400	450-460	925	990-995	935	930	930	925	925
15....	930	395-400	395-400	450-460	925	990-995	935	930	930	925	925

NOTE.—The official value of gold on the 11th of April, 1902, for the payment of custom-house duties was at the rate of 1,000 per cent.

TEXTILE PLANTS.

[From the book of Dr. de Bourgade La Dardye on Paraguay.]

RAMÉE.

This plant grows wild in Paraguay, reaching sometimes a height of 4 or 5 feet in the damp soil of the virgin forest. Two varieties are found in the vicinity of the rivers, viz, *Urtica utilis* and *Urtica nivea*. M. Artecona, of Asunción, who has made experiments upon this native plant, has found that, without any cultivation at all, eight gatherings may be made in the course of one year. Such a number may appear excessive, and it is more than likely it could never be maintained in the open country outside the forests. The warm, moist atmosphere of the underwood in South America is very different to the air of the *campo*; but even allowing, as M. Valenson, of Las Toscas, maintains, that four gatherings a year could be obtained, this would be a yield greater than that of any other country. As the cultivation of this valuable *Urtica* has only been tried to a limited extent, I could not undertake to say what would be the average yield; but I know that Count de Malartie, who has imported it into France, has been accustomed to grow about 5,000 plants to an acre, and that he considers that a plantation once formed will last more than twenty years, a few days' weeding at a time being all the labor that is wanted. The French Industrial Society buys it at the rate of 6d. per pound, a price that speaks for itself as to the profit that should accrue from its cultivation.

IBYRA AND CARAGUATÀ.

Growing wild, and in a profusion that assures an unbounded supply for a long time without any cultivation at all, these two members of the family of the Bromeliaceæ are well worth the attention of anyone who might settle near Asunción. They are both of a kindred species

to the pineapple, bearing a wild fruit that has a flavor which is by no means disagreeable. Of the two, the ibyra is the more valuable; its flexible leaves grow in clusters and are often 12 feet in length. There are two varieties, one with a white edge, growing on the skirts of the forests, the other of a reddish hue, to be found in the forest itself. In some parts of the country the ground may be said to be literally covered with ibyra, especially around Arroyos y Esteros and Caraguatá; in fact, the latter town has derived its name from the Bromeliaceæ in its neighborhood. One man with a machete can cut several loads a day, and the plants grow up again in six months, so that two gatherings may be made every year from the same spot. The fiber runs along the entire length of the leaf, and is altogether a unique product; it does not rot, and has an unexampled power of resistance. M. Vetilar, who has written a learned work on textile plants, makes particular mention of the *Bromelia* as eminent for strength, fineness, and durability; and, having myself handled some hanks of it that had been prepared in Paris, I can give my opinion that it has a silkiness beyond what is found in *ramié*.

M. Artecona, being much impressed with the value of the ibyra, has made some attempts toward adapting it to weaving purposes in his factory near Arroyos y Esteros. He succeeded in decorticating the plant in its green state by means of cylindrical rollers, but owing to inadequate machinery he failed to get the peeling done satisfactorily; consequently he has temporarily abandoned the project of preparing skeins for weaving and has contented himself with the simpler operation of making them fit for paper making. The paper that is produced from this material is at once strong and supple and of a quality superior to that which is usually employed for bank notes.

After lying for six hours in a vessel exposed to the action of hot steam, all the pulpy part disappears from the leaf, leaving only a thin pellicle, inside which the fibers are left in their natural position, separate and distinct. Before the fiber could be rendered fit for weaving this pellicle would have to be removed, but for paper manufacturing it presents no difficulty. For a time, then, it may be well to confine the manipulation of ibyra to the less costly and laborious process, which, including gathering and packing, can all be gone over in three days.

What I have said will tend to call attention to the subject; but in a few years I should believe that ibyra will be one of the sources of wealth for Paraguay. Very much the same may be said with respect to *caraguatá*, except that the fiber being coarser it is better adapted for ropes and twine.

In 1887 about 50 tons of rope and string were brought into Asunción. Nothing could be more unreasonable than that there should be

an import of such a kind into a country where textile materials are so exceptionally abundant. Unquestionably there must be a fine opportunity for an energetic manufacturer to start a business in this line, if it were only to meet the local demand.

PALMS.

The two kinds of palms that supply the most serviceable material for spinning are the *mbocaya* and the *yatahy*. The former (*Cocos sclerocarpa*) has leaves of a considerable length, containing a fine, strong fiber that in some respects resembles the *caraguatá*. It is very easily peeled, and all over the country a great variety of uses is found for it. The Indians apply it to many domestic purposes; they likewise make it into nets, which are capable of any amount of wear, and I have seen fabrics woven out of it that are very soft in texture and take an excellent dye.

The *yatahy* can not be said to be so generally useful. It is used for making string and for hats and fans; but it is a plant that has its own special value, on account of a farinaceous pith that is extracted from the stem, and a spirit that is made from the fermented fruit.

SAMUHÙ.

This is the plant that produces what is known as "vegetable silk." It is closely allied to the cotton tree, inasmuch as the *Bombacæ*, to which it belongs, and the *Gossypium* are both genera of the *Malvaceæ* tribe. As the down is very short it has not the industrial value of cotton, but it has a luster and flexibility which make it very similar to floss silk. I saw a *poncho* that was sent to the Paris Exhibition of 1889, and I am sure that its softness and silken sheen could not fail to be admired, if only it once attracted the notice of the fashionable world.

There are several varieties of *Samuhù* belonging to different genera of the *malvaceæ*. One of these is known in the Argentine Republic as *palo borracho*; it has a straggling growth by which it can be distinguished at a great distance along the river banks, and from which it derives its Brazilian name of *barrigudo* and its botanical definition of *bombax ventricosa*. I found one variety in the Ygatimi Valley of which the unripe fruit was remarkable for the great diversity of colors it presented. The trunk, which is straight and perfectly cylindrical, is sometimes 70 feet high, and is covered with long thorns. The Indians do not utilize the down; they use only the strong fibrous substance that is found underneath the bark. Out of the trunk itself they make their light canoes. M. Luigi Balzan has described five species of *Samuhù*; but I am not aware that he mentions a kind which I met with on the Jejuy and Upper Paraná; it is a creeper, growing to a great height and known among the natives as *ysipo-samuhù*.

In Matto Grosso the down is much in demand for pillows and cushions.

GUEMBEPI.

Belonging to the Aroideæ family (*polhos pinnatifida*), this creeper in certain districts is known as *mbegueqi*. It is most frequently found hanging down from the tops of the tallest trees in the forest, and its roots, before reaching the ground, form the inextricable tangles that are the most picturesque feature of the "*montes vírgenes*." The filaments that are taken from the bark are of a length and durability that are quite unrivaled; they are so black that all the ropes into which they are twisted have a marked character of their own. It was because they can be kept so long in water without rotting that Lopez used them for his ships. My own experience has shown me that in heavy work, where hemp ropes have given way, those made of *guembepi* have often been able to bear the strain. Those who are responsible in any way for the administration of naval affairs might do well to give their attention to a material that seems destined to be of such importance in the rope-making industry.

CAAPOROPY.

This, which is another of the urticeæ family, produces a thread which may be woven like flax. It grows near inhabited places in the same way as the common nettle, and with comparatively little outlay might be made a source of profit.

OTHER PLANTS.

The banana, the pino-guazu or great wild nettle, the pyta or American aloe, the cururu-iby, the chaguara, the guembe, the igan, the icipo curuzu-y caatpeba, the mbocaya-saite, the paragua rembiú, the yuacarinina, the yatai, and the caa-pigui are plants from which textile material can also be obtained.

VARIOUS RAW MATERIALS.

Dyestuffs.—Color manufacture, both for painting and dyeing, has every likelihood of making its way in the markets of Asunción. The mineral as well as the vegetable kingdom produces a variety of coloring materials, some of which are already known and would have an immediate sale, while others as yet have a reputation to acquire beyond the locality in which they are found.

Among the mineral dyes mention will only be made of ocher and manganese, both of which would be sure to sell in all American markets. The present supply is entirely furnished from Europe, although the Paraguayan manganese is of a specially fine quality.

If at some future time the promising beds of porcelain clay are properly worked, as well as those of fuller's earth, that I have seen in Paraguay, there will be quite enough manganese and iron to decorate all the pottery that can be made; and as I have found copper ore in the Sierra Mbaracayu, I feel sure that salts of copper will not be wanting.

But it is in the vegetable kingdom that nature has been most lavish in the supply of dyeing substances. Generation after generation, from the most primitive times, the knowledge of the properties of certain plants has been handed down; from the native Indians it passed to their conquerors; but the secret of the preparation has been profoundly kept, so that it has never yet been divulged to the Old World, where, however, since the discovery of the aniline dyes, it could not be turned to such good account as formerly it might have been.

Yet, in spite of the progress that has been made of late years in the manufacture of colors, and notwithstanding the large variety of novel tints that have been introduced to the public, it is interesting to know what are the raw materials still existing in the new continent. It may be that new settlers will bring unexpected substances to light.

At the Paris Exhibition in 1855 the Government of Paraguay, having sent samples of 14 dyes, received a first-class medal; and again in 1889 it was awarded a gold medal as the result of competition in the same class. And here I may insert a list of 26 of the plants that are utilized in the country in connection with the dyeing trade:

Black; 8 plants, namely:

1. *Arachi-chu* (*Solanum nigrum*), nightshade.
2. *Coca* (*Erythroxylon tortuosum*). This must not be confounded with *E. Coca*, though it also contains a certain quantity of cocaine.
3. *Timbo* (*Enterolobium timbowa*). It is the fruit of this which yields a jet-black tint.
4. *Ibopé*, or *Algarrobo* (*Prosopis dulcis*). The bark of this, which is very full of tannic matter, produces, when mixed with salts of iron, a fine black dye, which does not injure the tissue of fabrics submitted to it.
5. *Mureci* (*Byrsonima verbascifolia*). The coloring matter of this and the three following kinds is extracted from the bark.
6. *Mechoacan* (*Convolvulus giganteus*).
7. *Urundey-mi* (*Astronium urundeiba*).
8. *Tubicha moroti* (*Cassia occidentalis*).

Violet; 1 plant, viz:

9. *Yuqueri pehy*. From this plant either a violet or a yellow dye may be obtained, according to the chemical base that is used as mordant.

Indigo; 2 plants, viz.:

10. *Caa-hoby* (*Indigofera tinctoria*). This is the true indigo, the extract of which is as fine as any in the market. All that has ever been sent to Europe has been bought up at a good price; but hitherto the manipulation has only been carried on in the most primitive fashion by the Indians and half-breeds.
11. *Urubu retyma* (*Eupatorium indigofera*). This plant, having the brilliancy of the true indigo, is often used to adulterate it.

Blue; 3 plants, viz.:

12. *Caa-chira* (*Oldenlandia carimbosa*); a very small plant, with a quadrangular stem, which produces a bright blue dye. According to Parodi, the same name is often given to one of the *indigoferæ*.
13. *Nandy-pa* (*Genipa americana*); the fruit of which yields a most effective blue dye.
14. *Caa-hu-guazu* (*Solanum verbacifolium*). This is used in two different ways; it is soaked in urine to produce a blue dye, so dark as to be almost black; or it is mixed with indigo to hasten fermentation.

Green; 1 plant, viz.:

15. *Caa-hoby* (*Cessus tinctoria*). The green dye extracted from this is not very durable and is liable in course of time to change into blue.

Yellow; 5 plants, viz.:

16. *Chilea* (*Baccharis calliprinos*). The blossom yields a tint of bright ocher.
17. *Isypo-yu*—of the family of the Escitamineæ. According to Parodi this plant contains curcumine.
18. *Mbuy-Ibotey-Sainba*. The coloring matter in this is slightly resinous.
19. *Caa-pa* (*Maclura Xanthoxyrum*).
20. *Tata-y-iba* (*broussonetia tinctoria*).

Red; 6 plants, viz.:

21. *Taiy-Picho-y* (*Lapacho cresco*). The coloring matter of this, which is originally yellow, when treated with alkalis becomes first orange, then a bright red.
22. *Caa-Tigua* (*Trychilia catigua*).
23. *Caa-acy* (*Malpighia rossa*). The dye is a pale rose.
24. *Caa-canga* (*Gallicem cangay*). This is very abundant in Paraguay; this root produces a very brilliant red, little inferior to madder. Du Graty says that the country people mix it with cochineal.
25. *Urucu* (*Bixa orellana*). Of the various tinctorial plants of South America, this is one of the most common; it gives the bright vermilion with which the Indians paint their bodies. The quantity of tannin it contains makes it a good dye; its properties are slightly astringent, but the quantity that has to be used is so minute that no ill effects can be entailed. To some extent it is used in coloring wine, and it would be interesting to know whether it could not be adopted as a substitute for some of the materials now in use which are so deleterious. The urucu seeds could always be most easily procured, as the plant grows so abundantly.
26. *Yerba de la piedra*, a Lichen (*Usnea*). When treated with an alkali, this plant yields a fine claret-colored dye, due as M. Parodi observes, to the development of usnic acid.

As already stated, samples of these dyes, with specimens of home-dyed fabrics to which they have been applied, have been sent to Europe; but the process of dyeing in Paraguay is so primitive and unskilled that no true estimate can be formed of the effects which the various coloring substances are capable of producing. They ought to be manipulated with modern appliances and by trained work people, otherwise they will fail to do justice to Paraguay and to be of proper service to commerce.

The cochineal might be easily acclimatized, as the nopal (*Cactus opuntia*), on which the insect mainly feeds, grows wild in great abun-

dance. A very insignificant outlay would suffice for this, and then the country would be in command of all the requirements for prosecuting the dyeing industry. A well-organized establishment for developing this design would have no lack of material and could scarcely fail of success.

TIMBER TRADE.

[From the British Consular Report for the year 1900.]

An increase in the export of Paraguayan timber for sleepers has been noticeable lately, and it is thought that Paraguayan soft woods will also be in demand shortly for the manufacture of paper. Of the 60 varieties of wood in use in the country, only about 20 are exported, and of these the principal with their local names and prices are as follows:

1. *Curupaí*.—A hard red wood, very durable and much used for sleepers, piles, etc. It commands a good market in the Argentine, the price in Asunción being about 2s. the vara of 10 by 10 inches.

2. *Cedar*.—Though inferior in grain and scent to the Cuban variety, large quantities of this wood are exported to the Argentine Republic and to Germany, the trade with the latter country having sprung into existence at the time of the Spanish-American war. There is a considerable demand for Paraguayan cedar in Bremen, where it is used for the manufacture of cigar boxes. It is, strictly speaking, more of a mahogany than a cedar, but has the grain and scent of the latter. Price 2s. per vara, 10 by 10 inches.

3. *Laurel negro (black laurel)* is used for sleepers, but not being as durable as curupaí and being inflammable, the demand is not great. Price 1s. 6d. per post.

4. *Palo de rosa (rosewood)* is similar to the English rosewood, but lighter in color. Properly seasoned it takes a high polish and is suitable for light furniture. It also possesses medicinal qualities. Price uncertain.

5. *Ibirá-no* is a hard flexible wood for which there is a growing demand for carriage and shipbuilding, as it does not warp or crack. Importers of the United Kingdom have expressed great satisfaction with samples received and state that it may replace teak to a great extent, the grain being very close and well adapted to resist the action of sun and water. Its one defect is its heaviness, but in spite of this there is reason to believe that it will soon command an increased sale in Europe. Price about 2s. the vara of 10 by 10 inches.

6. *Lapacho (black and yellow)*.—There is a great demand for this wood in Buenos Ayres, where it is used for making rough carts and spans for bridges. Though sometimes used also for sleepers it is not well adapted for this purpose, as, unless covered over with soil, it is apt to take fire from the sparks from the engine.

7. *Peteriby negro* is used locally for furniture making, and being easily worked and capable of taking a high polish should, when better known, command a sale in Europe. Price about 3s. the vara.

8. *Quebracho colorado* is the most important of Paraguayan woods, considerable quantities being exported to Germany, chiefly to Hamburg, where a large amount is always kept in stock. Its principal use is for tanning, and the demand is increasing every year. German capital finds a remunerative investment in this wood, and a line of steamers is employed solely for this trade. There is one extract factory in the country, but probably several more will be established before long. The price of quebracho colorado delivered in Hamburg is about 66s. per ton.

Although sleepers of quebracho colorado wood were laid down in Paraguay over thirty years ago and are in many cases still in good condition, complaints have been made that the wood is inclined to crack, especially at the heart. I am informed on good authority, however, that in order to avoid this only that part of the sleeper which rests on the ground should be squared, and that the top should be left in its natural condition with the bark on. When this is done it is claimed that quebracho colorado will assert its superiority over all other woods for this purpose. The following diagram will perhaps make my meaning clear:



According to an analysis recently made, quebracho logs produce an average of 25 per cent of tanning substance and a maximum of 29 per cent. Paraguayan quebracho contains more tanning extract and is of a finer color than that found in the Argentine Republic.

9. *Urundi-mi* is one of the best hard woods of the country and possesses many of the qualities of curupaí, being even more durable. Price about 2s. the vara of 10 by 10 inches.

10. *Tatané* is a beautiful golden-colored wood resembling satinwood and taking a very high polish. Boxes made of it secure the contents thereof against insects of all kinds. This wood is of a hard close grain and will last for years in the earth or under water. Locally it is used for making stems and sterns of ships. Price about 2s. 4d per vara of 10 by 10 inches.

11. *Palo santo*.—*Lignum-vitæ*. A heavy dark wood of which there is but a limited supply. It is used in place of "bronzes" for bearings in engines and screw shafts. Pulley and block wheels are also made of it. Palo santo has the medicinal qualities of the *lignum-vitæ*. Price about £6 per ton in Asunción. Hitherto it has been chiefly exported to France, where it has been known to sell for £10 per ton.

DISTANCES.

The distance by water between the port of Asunción and Buenos Ayres is 332 leagues,^a as shown in the following table:

From Asunción to—	Leagues.	From Asunción to—	Leagues.
Villeta.....	7	Goya	127
Villa Oliva.....	24	Esquina	157
Formosa.....	29	La Paz.....	177
Villa Franca	35	Paraná.....	217
Villa del Pilar.....	51	Diamante	230
Humaitá.....	58	Rosario.....	252
Bocas del Rio Paraguay.....	66	San Nicolás	267
Corrientes	74	San Pedro	286
Bella Vista.....	113	Buenos Ayres.....	332

The following table shows the distances between the places named, in leagues:

From Asunción to Rosario	37.8
From Rosario to San Pedro	10.9
From Rosario to San Joaquín	34.7
From San Joaquín to Caaguazú.....	14.1
From Villa Rica to San Estanislao.....	29
From Villa Rica to Caazapa.....	12
From Villa Rica to Yuty.....	25
From Villa Rica to Encarnación.....	50
From Ibitimý to Ibicuy	10.4
From Ibicuy to Caapucú.....	7
From Ibicuy to Acay	3.7
From Acay to Paraguari.....	7

^a A league is equal to 3 miles.

Distances of the principal ports of Upper Paraguay from Asunción to Corumbá (Brazil).

[1 league=4,330 meters.]

From Asunción to—	Leagues.	From Asunción to—	Leagues.
Villa Hayes.....	6	Puerto Casado.....	122
Emboscada.....	10	Río Apa.....	128
Villa Rosario.....	34½	Puerto Murtinho (in Brazil; port of entry).....	140
Boca río Yejuí.....	44½	Olimpo (colony and fort at Par- aguayan Chaco).....	162
Curuzú-Chicá (port and custom- house).....	50	Bahía Negra (colony and military post at Paraguayan Chaco).....	195
Villa Concepción.....	75	Coimbra (in Brazil; fort).....	207
San Salvador.....	95	Corumbá (in Brazil; fort).....	245
Colonia Penal.....	112		
Peña Hermosa.....	114		
Colonia Risso.....	119		

VALUE OF FOREIGN COINS IN PARAGUAY.

GOLD COINS.

Spanish onza.....	\$16.30
Colombian, Mexican, Peruvian, and Chilean onza.....	16.00
United States \$20 piece.....	20.40
Peruvian 20-sols piece.....	20.00
Chilean condor.....	9.25
Brazilian 20-milreis piece.....	11.20
Spanish 100 reales doblon.....	5.10
English sovereign.....	5.00
Argentino.....	5.00
French 20-franc piece.....	4.00
Austro-Hungarian 8-florin piece.....	4.00
German 20-marks piece.....	4.90

SILVER COINS.

Spanish peso duro.....	\$1.00
Portuguese 960-reis piece.....	1.00
Brazilian 2-milreis piece (without effigy).....	1.00
Brazilian 2-milreis piece (with effigy).....	.90
United States silver dollar.....	1.00
French, Belgian, and Italian 5-francs piece.....	1.00
German 5-marks piece.....	.20

NOTE.—Coins of value inferior to \$0.50, except those of the Argentine Republic, are not allowed legal circulation in Paraguay.

All gold and silver coins not specified in the foregoing list are accepted by merchants at rates in proportion to those above stated.

WEIGHTS AND MEASURES.

The French decimal metrical system was finally adopted for all kinds of transactions in the Republic on the 1st of January, 1901.

The following schedule showing the equivalents between the weights and measures of the old system and the ones of the new régime, was officially published on the above-named date.

Weights.

Pounds to kilograms.		Kilograms to pound.		Pounds to kilograms.		Kilograms to pound.	
1.....	0.4594	1.....	2.176	31.....	14.2414	31.....	67.479
2.....	0.9188	2.....	4.353	32.....	14.7008	32.....	69.656
3.....	1.3782	3.....	6.530	33.....	15.1602	33.....	71.832
4.....	1.8376	4.....	8.707	34.....	15.6196	34.....	74.009
5.....	2.2970	5.....	10.883	35.....	16.0790	35.....	76.186
6.....	2.7564	6.....	13.060	36.....	16.5384	36.....	78.363
7.....	3.2158	7.....	15.237	37.....	16.9978	37.....	80.539
8.....	3.6752	8.....	17.414	38.....	17.4572	38.....	82.716
9.....	4.1346	9.....	19.590	39.....	17.9166	39.....	84.893
10.....	4.5940	10.....	21.767	40.....	18.3760	40.....	87.070
11.....	5.0534	11.....	23.944	41.....	18.8354	41.....	89.246
12.....	5.5128	12.....	26.121	42.....	19.2948	42.....	91.423
13.....	5.9722	13.....	28.297	43.....	19.7542	43.....	93.600
14.....	6.4316	14.....	30.474	44.....	20.2136	44.....	95.777
15.....	6.8910	15.....	32.651	45.....	20.6730	45.....	97.953
16.....	7.3504	16.....	34.828	46.....	21.1324	46.....	100.130
17.....	7.8098	17.....	37.004	47.....	21.5918	47.....	102.307
18.....	8.2692	18.....	39.181	48.....	22.0512	48.....	104.484
19.....	8.7286	19.....	41.358	49.....	22.5106	49.....	106.660
20.....	9.1880	20.....	43.535	50.....	22.9700	50.....	108.837
21.....	9.6474	21.....	45.711	100.....	45.9400	100.....	217.670
22.....	10.1068	22.....	47.888	200.....	91.8800	200.....	435.300
23.....	10.5662	23.....	50.065	300.....	137.8200	300.....	653.000
24.....	11.0256	24.....	52.242	400.....	183.7600	400.....	870.700
25.....	11.4850	25.....	54.418	500.....	229.7000	500.....	1,088.300
26.....	11.9444	26.....	56.595	600.....	275.6400	600.....	1,306.000
27.....	12.4038	27.....	58.772	700.....	321.5800	700.....	1,523.700
28.....	12.8632	28.....	60.949	800.....	367.5000	800.....	1,741.400
29.....	13.3226	29.....	63.125	900.....	413.4600	900.....	1,959.000
30.....	13.7820	30.....	65.302	1000.....	459.4000	1000.....	2,176.700

Measures.

Varas to meters.		Meters to varas.		Varas to meters.		Meters to varas.	
1.....	0.866	1.....	1.154	29.....	25.114	29.....	33.466
2.....	1.732	2.....	2.308	30.....	25.980	30.....	34.620
3.....	2.598	3.....	3.462	31.....	26.846	31.....	35.774
4.....	3.464	4.....	4.616	32.....	27.712	32.....	36.928
5.....	4.330	5.....	5.770	33.....	28.578	33.....	38.082
6.....	5.196	6.....	6.924	34.....	29.444	34.....	39.236
7.....	6.062	7.....	8.078	35.....	30.310	35.....	40.390
8.....	6.928	8.....	9.232	36.....	31.176	36.....	41.544
9.....	7.794	9.....	10.386	37.....	32.042	37.....	42.698
10.....	8.660	10.....	11.540	38.....	32.908	38.....	43.852
11.....	9.526	11.....	12.694	39.....	33.774	39.....	45.006
12.....	10.392	12.....	13.848	40.....	34.640	40.....	46.160
13.....	11.258	13.....	15.002	41.....	35.506	41.....	47.314
14.....	12.124	14.....	16.156	42.....	36.372	42.....	48.468
15.....	12.990	15.....	17.310	43.....	37.238	43.....	49.622
16.....	13.856	16.....	18.464	44.....	38.104	44.....	50.776
17.....	14.722	17.....	19.618	45.....	38.970	45.....	51.930
18.....	15.588	18.....	20.772	46.....	39.836	46.....	53.084
19.....	16.454	19.....	21.926	47.....	40.702	47.....	54.238
20.....	17.320	20.....	23.080	48.....	41.568	48.....	55.392
21.....	18.186	21.....	24.234	49.....	42.434	49.....	56.546
22.....	19.052	22.....	25.388	50.....	43.300	50.....	57.700
23.....	19.918	23.....	26.542	100.....	86.600	100.....	115.400
24.....	20.784	24.....	27.696	200.....	173.200	200.....	230.800
25.....	21.650	25.....	28.850	300.....	259.800	300.....	346.200
26.....	22.516	26.....	30.004	400.....	346.400	400.....	461.600
27.....	23.382	27.....	31.158	500.....	433.000	500.....	577.000
28.....	24.248	28.....	32.312	1,000.....	866.000	1,000.....	1,154.000

Measures—Continued.

Square varas to square meters.		Square meters to square varas.		Square varas to square meters.		Square meters to square varas.	
1.....	0.749956	1....	1.333411	29.....	21.748724	29....	37.668919
2.....	1.499912	2....	2.668822	30.....	22.498680	30....	39.002330
3.....	2.249868	3....	4.000233	31.....	23.248636	31....	40.335741
4.....	2.999824	4....	5.332644	32.....	23.998592	32....	41.669152
5.....	3.749780	5....	6.667055	33.....	24.748548	33....	43.002563
6.....	4.499736	6....	8.000466	34.....	25.498504	34....	44.335974
7.....	5.249692	7....	9.333877	35.....	26.248460	35....	45.669885
8.....	5.999648	8....	10.667288	36.....	26.998416	36....	47.002796
9.....	6.749604	9....	12.000699	37.....	27.748372	37....	48.336207
10.....	7.499560	10....	13.334110	38.....	28.498328	38....	49.669618
11.....	8.249516	11....	14.667521	39.....	29.248284	39....	51.003029
12.....	8.999472	12....	16.000932	40.....	29.998240	40....	52.336440
13.....	9.749428	13....	17.334343	41.....	30.748196	41....	53.669851
14.....	10.499384	14....	18.667754	42.....	31.498152	42....	55.003262
15.....	11.249340	15....	20.001165	43.....	32.248108	43....	56.336763
16.....	11.999296	16....	21.334576	44.....	32.998064	44....	57.670084
17.....	12.749252	17....	22.667987	45.....	33.748020	45....	59.003495
18.....	13.499208	18....	24.001398	46.....	34.497976	46....	60.336906
19.....	14.249164	19....	25.334809	47.....	35.247932	47....	61.670817
20.....	14.999120	20....	26.668220	48.....	35.997888	48....	63.003728
21.....	15.749076	21....	28.001631	49.....	36.747844	49....	64.337139
22.....	16.499032	22....	29.335042	50.....	37.497800	50....	65.670550
23.....	17.248988	23....	30.668453	100.....	74.995600	100....	133.341100
24.....	17.998944	24....	31.001864	200.....	149.991200	200....	266.682200
25.....	18.748900	25....	32.335275	300.....	224.986800	300....	400.023300
26.....	19.498856	26....	33.668686	400.....	299.982400	400....	533.364400
27.....	20.248812	27....	35.002097	500.....	374.978000	500....	666.705500
28.....	20.998768	28....	36.335508	1,000.....	749.956000	1,000....	1,333.411000

Liters to cuartas.		Cuartas to liters.		Liters to cuartas.		Cuartas to liters.	
1.....	1.686	1.....	0.593	31.....	52.266	31.....	18.383
2.....	3.372	2.....	1.186	32.....	53.952	32.....	18.976
3.....	5.058	3.....	1.779	33.....	55.638	33.....	19.599
4.....	6.744	4.....	2.372	34.....	57.324	34.....	20.162
5.....	8.430	5.....	2.965	35.....	59.010	35.....	20.755
6.....	10.116	6.....	3.558	36.....	60.696	36.....	21.348
7.....	11.802	7.....	4.151	37.....	62.382	37.....	21.941
8.....	13.488	8.....	4.744	38.....	64.068	38.....	22.534
9.....	15.174	9.....	5.337	39.....	65.754	39.....	23.127
10.....	16.860	10.....	5.930	40.....	67.440	40.....	23.720
11.....	18.546	11.....	6.523	41.....	69.126	41.....	24.313
12.....	20.232	12.....	7.116	42.....	70.812	42.....	24.906
13.....	21.918	13.....	7.709	43.....	72.498	43.....	25.499
14.....	23.604	14.....	8.302	44.....	74.184	44.....	26.092
15.....	25.290	15.....	8.895	45.....	75.870	45.....	26.685
16.....	26.976	16.....	9.488	46.....	77.556	46.....	27.278
17.....	28.662	17.....	10.081	47.....	79.242	47.....	27.871
18.....	30.348	18.....	10.674	48.....	80.928	48.....	28.464
19.....	32.034	19.....	11.267	49.....	82.614	49.....	29.057
20.....	33.720	20.....	11.860	50.....	84.300	50.....	29.650
21.....	35.406	21.....	12.453	100.....	168.600	100.....	59.300
22.....	37.092	22.....	13.046	200.....	337.200	200.....	118.600
23.....	38.778	23.....	13.639	300.....	505.800	300.....	177.900
24.....	40.464	24.....	14.232	400.....	774.400	400.....	237.200
25.....	42.150	25.....	14.825	500.....	943.000	500.....	296.500
26.....	43.836	26.....	15.418	600.....	1,111.600	600.....	355.800
27.....	45.522	27.....	16.011	700.....	1,280.200	700.....	415.100
28.....	47.208	28.....	16.604	800.....	1,448.800	800.....	474.400
29.....	48.894	29.....	17.197	900.....	1,617.400	900.....	533.700
30.....	50.580	30.....	17.790	1,000.....	1,686.000	1,000.....	593.000

CHAPTER XX.

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Appendix No. 1.

CONSTITUTION OF THE REPUBLIC OF PARAGUAY.

We, the representatives of the Paraguayan Nation, assembled by the free and spontaneous will of the Paraguayan people in national constitutional convention for the purpose of establishing justice, securing domestic peace, providing for common defense, promoting the general welfare, and causing the benefits of liberty to be lasting for ourselves, our descendants, and in general all men inhabiting the Paraguayan soil, after having invoked Almighty God, the Supreme Legislator of the Universe, do hereby order, decree, and establish this Constitution of the Republic of Paraguay.

PART FIRST.

CHAPTER I.—*General Declarations.*

ARTICLE 1. Paraguay is and shall be forever free and independent; constitutes itself in a Republic one and indivisible; and adopts for its government the democratic representative form.

ART. 2. The sovereignty is vested essentially in the nation, and the nation delegates it to the authorities established by the present Constitution.

ART. 3. The religion of the State is the Roman Catholic Apostolic; but Congress, however, shall not have power to forbid the exercise of any other religion within the territory of the Republic. The chief prelate of the Paraguayan church shall be a Paraguayan.

ART. 4. The Government shall meet the expenses of the nation out of the funds of the national treasury, formed by the collection of duties on exports and imports, the sale or lease of public lands, the proceeds of the postal and railroad services, the loans and operations of credit which may be contracted or made, and the taxes of all kinds which Congress may levy by special laws.

ART. 5. The circulation in the interior of the Republic of effects, the product or manufacture of the nation, shall be free from duty. The same freedom shall be enjoyed by articles introduced from abroad, intended for purposes of education, public instruction, and agriculture, and also steam engines, and presses and material for printing.

ART. 6. The Government shall promote American and European immigration, and shall not have power to restrict, limit, or burden with charges of any kind the admission into the Paraguayan territory of foreigners coming into it with the intention of promoting industrial enterprises, cultivating the soil, or teaching sciences or arts.

ART. 7. The navigation of the interior rivers of the nation is free to all flags; but the rules and regulations which Congress may enact for the proper use of this freedom shall be observed.

ART. 8. Primary instruction is compulsory, and the Government shall give to it priority. A report on this subject shall be made to Congress every year by the head of the educational department of the Government, and Congress shall attend to all the recommendations made in that document and promote by all possible means the instruction of the citizens.

ART. 9. In case of internal disturbance, or foreign attack, of sufficient gravity as to endanger the observance of the Constitution and the exercise of the power and duties vested in the authorities created by it, a part or the whole of the Paraguayan territory may be declared, for a limited time, to be in a state of siege. During such time the power of the President of the Republic shall not go beyond arresting the suspected persons, or causing them to move from one place of the Republic to another, if they do not prefer to leave the country.

ART. 10. Congress shall promote the proper reform of the laws hitherto in force.

ART. 11. The rights of trial by jury in criminal cases shall be guaranteed to all and shall be forever inviolable.

ART. 12. It shall be the duty of the Government to affirm, by means of treaties concluded in conformity with the principles of public law established in this Constitution, the relations of peace and commerce with foreign nations.

ART. 13. Congress shall not have power to grant the Executive extraordinary powers, or vest in it the whole of the public authority, nor shall it give the same any authority or supremacy which may cause the lives, the honor, or the property of the inhabitants of the Republic to be at the mercy of the Government, or of some individual persons. Dictatorship shall be unlawful and inadmissible in the Republic of Paraguay, and anyone who may propose to establish it or consents or subscribes to its establishment, shall be held to be an infamous traitor to the country, and liable therefor to the proper penalties and responsibility.

ART. 14. All authorities, employees, and functionaries of the Republic are personally responsible for the faults and offenses committed by them in the exercise of their functions. All their acts shall be in strict conformity with the law; and in no case shall they exercise authority beyond their own jurisdiction.

ART. 15. The principles, guaranties, and rights recognized by the present Constitution can not be abridged or modified by any laws purporting to carry them into effect.

ART. 16. The present Constitution, the laws enacted by Congress in pursuance thereof, and the treaties concluded with foreign countries, shall be the supreme law of the nation.

ART. 17. The authorities called upon to exercise the legislative, executive, and judicial powers shall reside in Asunción, the capital of the Republic of Paraguay.

CHAPTER II.—*Rights and Guaranties.*

ART. 18. All the inhabitants of the Republic shall enjoy, subject to proper regulations, the following rights, namely: The right to navigate, and engage in commercial business, to work and exercise all kinds of lawful industries, to meet peaceably, to petition the authorities, to enter the Paraguayan territory, remain in it, travel through it, or leave it, without a passport, to publish their ideas through the press without being subject to previous censorship, to use and dispose of their property, to associate with each other for useful purposes, to profess freely their own religion, to teach, and to learn.

ART. 19. Property is inviolable, and no inhabitant of the Republic shall be deprived of his property unless it is by judicial sentence founded on law. Condemnation for public use has to be made under provision and by process of law, and upon previous indemnification. Congress alone shall have the power to impose the taxes spoken of in article 4; and no tax shall be levied by any other authority or person, unless under special authority from the same Congress. No personal service shall be demanded which is not established by law, or by judicial sentence founded on law. Authors or inventors are the exclusive owners of their works, inventions, or discoveries, during the time fixed by law. Confiscation of property is forever stricken out from the Paraguayan penal code. The penalty of death for political

offenses is also abolished. No armed body shall make requisitions, or ask for assistance of any kind, without making the proper remuneration.

ART. 20. No inhabitant of the Republic shall be punished without trial and conviction, founded on law anterior in date to the offense, or by special commissions, unless it is in conformity with the provisions of article 11. No one shall be compelled to testify against himself, or be arrested unless by written order of a competent authority, or detained for more than twenty-four hours without being given information of the charges preferred against him. The detention shall always be either in the house of the accused or in the public establishment set apart for this purpose. The law presumes innocent all those not yet adjudged either guilty, or lawfully suspected of being guilty, under a ruling of the court giving the grounds of the adjudication.

ART. 21. The defense in court of the person and rights of a party is inviolable. Domicil as well as correspondence and private papers are also inviolable; but a law may provide in which cases and on what grounds an order can be made for the entering of the one and the seizing of the other. Torture of all kinds and whipping are abolished. The jails shall be healthy and clean, and intended for the safe-keeping of the prisoner, and not for vexing him. Any precautionary measure leading to a greater inconvenience than what is required for the said safe-keeping shall cause their authors to incur responsibility.

ART. 22. No excessive bail shall be demanded, nor shall excessive fines be imposed.

ART. 23. The judgment of private acts, which in no way transgress public order or morals or wrong third parties, is reserved to God alone and is beyond the jurisdiction of the constituted authorities. No inhabitant of the Republic shall be compelled to do what is not ordered by law, or prevented from doing what is not forbidden by it.

ART. 24. The liberty of the press is inviolable and no law shall be enacted to abridge it or restrict it in any way. The trials for offenses committed through the press shall only be by juries; and in the cases arising out of publications against public officials in censure of their official conduct, evidence of the truth of the imputations made shall be admitted.

ART. 25. There are no slaves in the Republic of Paraguay. If any one should be found within its limits he shall become free from the moment in which the present Constitution goes into effect, and such indemnities as may become proper under this declaration shall be ordered by special law. Slaves introduced in Paraguay in whatever manner shall become free from the mere fact of treading upon the Paraguayan soil.

ART. 26. The Paraguayan nation does not admit prerogatives of blood or birth, nor does it recognize personal privileges or titles of nobility. All its inhabitants are equal before the law, and qualified to serve public offices of all description, if competent to fulfil them. Equality is the basis upon which taxation and the distribution of public burdens are to be founded.

ART. 27. The right of all citizens to cast a vote is inviolable. The President and his ministers are forbidden to interfere in any way, directly or indirectly, with the popular elections. Any official, whether of the city or of the rural districts, who on his own movement, or in obedience to superior orders, attempts to coerce, whether directly or indirectly, the vote of one or more citizens, shall be deemed guilty of a crime against the electoral liberty and punished accordingly.

ART. 28. All persons in the Republic are empowered to arrest a wrongdoer and take him immediately to the nearest authority, when the said wrongdoer has been caught in the act. No blame, disgrace, or dishonor shall be transmitted to the relatives of a wrongdoer on account of his acts.

ART. 29. All laws and decrees at variance with the provisions of the present Constitution shall be inoperative and void.

ART. 30. All Paraguayan citizens are bound to take up arms in defense of the

country and of the present Constitution, and do military service according to the laws and regulations made for that purpose by Congress or by the executive power. Naturalized citizens are equally bound to render this service on and after the expiration of the period of three years subsequent to their naturalization.

ART. 31. The people neither deliberate nor govern except through their representatives and the authorities created by the present Constitution. All armed forces or reunions of persons assuming to represent the rights of the people and petitioning in their name are guilty of sedition.

ART. 32. No retroactive effect shall be given to any law.

ART. 33. Aliens shall enjoy in the territory of the nation the same civil rights as belong to citizens. They can engage in industrial, commercial, or professional business; hold, purchase, and sell real estate; navigate the rivers; freely profess their religion; dispose of their property by last will and testament, as permitted by the law of the country, and marry under the same law. They shall not be compelled to become citizens of the country or to pay extraordinary forced taxes.

ART. 34. The enumeration of rights and guaranties made in the present Constitution and the declarations contained in the same can not be so construed as to imply a denial of any other rights or guaranties not enumerated, but which naturally are derived from the principle of the sovereignty of the people and from the democratic representative form of government adopted by the Republic.

CHAPTER III.—*Citizenship.*

ART. 35. Paraguayan citizens are:

(1) All persons born in Paraguayan territory.

(2) The children of Paraguayan fathers or mothers, when domiciled in Paraguay, by the mere fact of their domiciliation.

(3) The children of Paraguayans born abroad, if their father is at the time in actual service of the Republic. Persons so born shall be Paraguayan citizens even for the purposes which, under the Constitution and the laws, require native citizenship.

(4) The naturalized citizens. They shall enjoy the same political and civil rights as the native ones, and may fulfill every position in the Government except the Presidency or Vice-Presidency of the Republic or the positions of members of the cabinet, deputies, or senators.

(5) The aliens upon whom Congress by special favor may grant naturalization.

ART. 36. To obtain naturalization in Paraguay it shall be sufficient for an alien to have resided two consecutive years in the country and have during this period either owned real estate, had some capital invested in business, practiced some profession, or engaged in some industrial occupation or art. This period of two years may be shortened if the alien has married a Paraguayan woman, or proves that he has rendered services to the Republic.

ART. 37. Congress shall have the power to declare whether those not born in Paraguayan territory are or are not entitled to naturalization under article 35; and if in the affirmative, the President of the Republic shall issue in their favor the proper letters of naturalization.

ART. 38. All Paraguayan citizens not having any of the disqualifications set forth in the following article shall have the right to vote at the completion of the eighteenth year of their age.

ART. 39. The right to vote shall be suspended:

(1) By physical or moral inability preventing free and deliberate action.

(2) By actual service as a private, corporal, or sergeant in the regular army, the mobilized national guard, or the navy.

(3) By the fact of the voter being under indictment for a felonious crime.

ART. 40. Citizenship shall be lost:

(1) By fraudulent bankruptcy.

(2) By accepting office, functions, distinctions, or pensions from a foreign Government without special permission of Congress.

ART. 41. Those who under the provisions of the preceding article have lost their citizenship have the right to apply to Congress and request to be restored to it.

PART SECOND.

CHAPTER IV.—*The Legislative Power.*

ART. 42. The Legislative Power of the Nation shall be vested in a Congress consisting of two Chambers, one of Deputies and the other of Senators.

CHAPTER V.—*The Chamber of Deputies.*

ART. 43. The Chamber of Deputies shall be formed by Representatives directly elected by the people of each electoral district by a majority of votes.

ART. 44. The Chamber of Deputies of the First Congress shall consist of twenty-six Representatives, to be elected in the manner which shall be provided by law, two months after the formal inauguration of the first Constitutional Government.

ART. 45. A general census shall be taken previous to the meeting of the Second Congress, and the number of Deputies shall then be fixed, according to its returns, at the rate of one Deputy for each 6,000 inhabitants, or fraction of this unit not less than 3,000. The census shall be taken every five years and no oftener.

ART. 46. To be a Deputy it shall be required to be a native-born citizen over 25 years of age. Should a Deputy be elected for more than one department, he shall choose the one farthest from the capital, in order to avoid delays.

ART. 47. The Deputies shall serve for four years and can be reelected; but the Chamber shall be renewed by halves every two years. The members of the First Congress shall decide by lot who, out of their number, shall leave at the end of the first period.

ART. 48. When a vacancy occurs the Government shall cause an election to be held, in order to fill the place.

ART. 49. The Chamber of Deputies has the exclusive right to originate all laws relating to taxation and recruiting of troops.

ART. 50. The Chamber of Deputies alone has the right to impeach before the Senate the President, the Vice-President, the Members of the Cabinet, the Justices of the Supreme Court, and the Generals of the Army and Navy for malfeasance in the exercise of their respective functions or for common offenses. Such a right can not be exercised unless the Chamber by a majority of two-thirds of its members present resolves that there are sufficient merits to put the offender on trial.

CHAPTER VI.—*The Senate.*

ART. 51. The Senate in the First Congress shall consist of thirteen Senators, to be elected in the same manner and at the same time as the Deputies. For the second period they shall be elected at the rate of one Senator for each 12,000 inhabitants or fraction of that unit not less than 8,000.

ART. 52. The Senators shall serve for six years, and can be reelected. But the Senate shall be renewed by one-third every two years, and the names of those leaving at the end of the first and the second periods shall be decided by lot.

ART. 53. To be a Senator it is required to be over 28 years of age and a native-born citizen.

ART. 54. The Vice-President of the Republic shall be the President of the Senate; but he shall have no vote except in case that the Senate be equally divided.

ART. 55. The Senate shall elect a President *pro tempore* to serve in case of absence of the Vice-President, or when the latter is called to act as President of the Republic.

ART. 56. The Senate shall have the sole power to try in public the cases of impeachment presented by the Chamber of Deputies. In such cases the Senators shall take an oath for that purpose. When the impeached official is the President or the Acting President of the Republic, the Senate shall be presided over by the Chief Justice of the Supreme Court. No one shall be adjudged guilty unless by a majority of two-thirds of the members present.

ART. 57. Judgment in cases of impeachment shall not extend further than to removal from office and even disqualification to hold and enjoy any office of honor, trust, or profit under the Nation; but the party convicted shall nevertheless be liable to indictment, trial, and punishment, according to law, before the ordinary tribunals.

ART. 58. When the seat of a Senator becomes vacant the Government shall cause at once an election to be held for that place.

CHAPTER VII.—*Provisions Common to the two Chambers.*

ART. 59. Both Chambers shall meet in ordinary session every year, on the 1st of April, and shall continue in session until the 31st of August. (The First Congress shall meet three months after the inauguration of the Constitutional Government.) They may also be called to convene in extraordinary session by the President of the Republic, or on motion of four Deputies and two Senators. They can be adjourned in the same way.

ART. 60. Each Chamber shall be the judge of the elections, returns, and qualifications of its own members, and a majority of each shall constitute a quorum to do business; but a smaller number may adjourn from day to day and may be authorized to compel the attendance of absent members in such manner and under such penalties as each Chamber may provide.

ART. 61. Both Chambers must begin and end their sessions simultaneously. Neither Chamber during the session of Congress shall, without the consent of the other, adjourn for more than three days.

ART. 62. Each Chamber shall determine the rules of its proceedings, and, with the concurrence of two-thirds of the votes, may punish its members for disorderly behavior in the exercise of their functions, or remove them for physical or moral inability, and even expel them if the Chamber thinks they are incapable or unable to have a seat in it. But a majority of only one shall be sufficient to decide upon accepting or rejecting the resignation voluntarily made by a Deputy or Senator.

ART. 63. No member of Congress shall be accused, judicially examined, or molested for opinions or speeches emitted or delivered by him in the exercise of his legislative functions.

ART. 64. No Senator or Deputy shall be subject to arrest for any offense from the day of his election until the date on which his office ceases, unless he is caught in the act of committing an offense punishable with a penalty involving disgrace, in which case the matter will be at once reported to the respective Chamber.

ART. 65. When an accusation is made in writing before the ordinary courts against any Senator or Deputy, the respective Chamber shall have the power, after examining in public the merits of the evidence filed before it, and by the vote of two-thirds of its members, to suspend the accused Senator or Deputy and place him at the disposal of the court of competent jurisdiction for proper trial.

ART. 66. Senators and Deputies shall take, upon entering on the exercise of their functions, an oath to fulfill them properly and to act in everything in conformity with the provisions of the present Constitution.

ART. 67. Each Chamber shall have the power to summon before it the members of the Cabinet and ask them for such explanations and information as it may deem advisable.

ART. 68. No member of the Cabinet can be a Senator or a Deputy without previously resigning his office.

ART. 69. No ecclesiastic can be a member of Congress. Nor can officials receiving salaries from the Nation be Deputies or Senators without first resigning their offices.

ART. 70. The services of the Deputies and Senators shall be remunerated by the National Treasury with a salary to be fixed by law.

ART. 71. The opening of the two Chambers shall be made by the President of the Republic.

CHAPTER VIII.—*Powers of Congress.*

ART. 72. It shall be the duty of Congress—

1. To enact as soon as possible a law regulating the establishment of municipalities in the Republic.

2. To enact also the law for the establishment of trial by jury.

3. To legislate in regard to custom-houses and establish duties on imports, and exports.

4. To levy direct taxes for a fixed period, whenever the defense, safety, and welfare of the State may require it.

5. To borrow money on the credit of the nation, establish a national Bank with power to issue notes, and make the proper regulations for said Bank.

6. To arrange for the payment of the national debt, whether foreign or domestic.

7. To make every year such appropriations of money as may be required to meet the expenses of the National Government, and to approve or disapprove the accounts of their disbursement.

8. To regulate the free navigation of the rivers, to declare which ports thereon shall be ports of entry, and to create or abolish custom-houses.

9. To coin money, regulate the value of the national and foreign coins, and establish a uniform system of weights and measures for the whole nation.

10. To enact Civil, Commercial, and Penal Codes, general laws of bankruptcy, and laws to punish counterfeiting and forgery of public documents of the State.

11. To establish post-offices and post roads in the Republic, and regulate commerce by land or sea with foreign nations.

12. To settle finally the boundaries of the Republic.

13. To provide for the security of the frontiers, and for the preservation of peaceful intercourse with the Indians, and promote the conversion of the latter to Christianity and civilization.

14. To provide for everything conducive to the prosperity of the country, and employ, above all, every possible means of securing progress and the diffusion of public instruction, both elementary and superior.

15. To promote industry, immigration, construction of railroads, navigable canals and telegraphs, colonization of lands belonging to the State, introduction and establishment of new industries, importation of foreign capital, and exploration and use of the interior rivers. For all these purposes it shall enact protective laws, and grant, for limited periods, concessions and privileges or other rewards.

16. To establish courts of justice inferior to the Supreme Court, to create and suppress offices, to fix the powers and duties of the offices created, and to grant pensions, honors, and general amnesties.

17. To accept or refuse to accept the resignation of the President or Vice-President of the Republic, to declare when a new election is to be held, and to make the counting of the votes.

18. To approve or disapprove the treaties and conventions entered into with other nations, and to authorize the executive power to declare war or make peace.

19. To fix the strength of the forces on land and sea which must stand whether in time of peace or war, and make regulations and ordinances for the government of

20. To call forth the militia in the whole Republic, or in any part thereof, when required for the execution of the laws of the nation, or for repressing insurrection or

repelling invasion; and to provide for the organization, armament, and discipline of said militia.

21. To permit foreign troops to enter the territory of the Republic, and allow the national forces to go out of it.

22. To declare a state of siege in one or several places of the Republic in case of internal disturbance, and to approve or suspend the state of siege declared during the recess of Congress by the Executive Power.

23. To exercise exclusive legislation in the whole territory of the Republic, and in all other places acquired by purchase or cession for the erection of fortresses, arsenals, storehouses, or other establishments of national utility.

24. To enact all the laws and rules necessary for the exercise of the powers enumerated in the preceding sections, and all others granted by the present Constitution to the Government of the Republic of Paraguay.

25. To authorize the Executive, at the request of the same, to make military appointments superior in rank to that of major.

26. To appoint a committee consisting of members of Congress to review the grants of military positions made by the former Governments, in order to either recognize or annul the concessions.

CHAPTER IX.—*The Making and Approving of the Laws.*

ART. 73. The laws can originate in either of the Chambers of Congress by means of bills introduced by any member or by the Executive Power. The laws referred to in article 49 are excepted from these rules. When a bill has passed the Chamber in which it originated it shall be sent to the other Chamber for its proper discussion, and if approved by the latter, it shall be forwarded to the Executive Power of the Republic. If it obtains the approval, it shall be promulgated as law.

ART. 74. All acts of Congress not returned by the Executive within ten working days shall be deemed approved.

ART. 75. No bill totally rejected by one of the Chambers shall be reintroduced during the same session. But if it is only amended by the other Chamber, it shall be returned to the Chamber where it originated, and if approved by it by an absolute majority as amended, it then shall be forwarded to the Executive of the nation. But if the amendments are objected to, the bill shall go back a second time to the Chamber which made them, and if the latter insists upon them by a majority of two-thirds of its members, the bill shall go again to the other Chamber, where it will be deemed approved if not rejected by two-thirds of the members present.

ART. 76. If an act of Congress is objected to, wholly or in part, by the Executive, it shall be returned, with the objections thereto, to the Chamber of origin, where it shall be discussed again, and if passed by a majority of two-thirds it shall then go to the other Chamber. If the latter also approves the bill by the majority above mentioned, the bill shall become a law and will be sent to the Executive for its promulgation as such. The vote in the two Chambers shall be in this case by ayes and nays, and the names of the voters as well as the explanation of the grounds on which the votes were founded, together with the objections made to the bill by the Executive, shall be published immediately in the newspapers. If the Chambers differ as to the objections, the bill can not be introduced again during the sessions of the same year.

ART. 77. The following shall be the form to be used for enacting the laws: "The Senate and Chamber of Deputies of the Paraguayan nation in Congress assembled, etc., do hereby enact as law the following."

CHAPTER X.—*The Permanent Committee.*

ART. 78. Congress before adjourning shall appoint by absolute majority in each Chamber a Permanent Committee, consisting of two senators and four deputies. The Chamber of Deputies shall also appoint two substitutes and the Senate one.

ART. 79. Upon the meeting of the regular members of the Committee they shall elect a chairman and a vice-chairman and give notice thereof to the Executive.

ART. 80. If it becomes necessary to call a substitute, the election shall be made by lot.

ART. 81. The Permanent Committee shall be in session from the day of its organization until the beginning of the next ordinary session of Congress.

ART. 82. It shall be the duty of the committee to see that the Constitution and the laws are observed, and their failure to do so shall render it responsible before the Chambers.

ART. 83. The Permanent Committee shall also receive the certificates of election of Deputies and Senators and cause them to be referred to the respective committees.

ART. 84. It shall also have the same power granted to each Chamber in Article 67 of the present Constitution.

ART. 85. The Committee shall hold preparatory meetings to examine the certificates of election, in order that the opening of the ordinary session of Congress may take effect on the day appointed by the Constitution.

ART. 86. The Committee shall take no action without a quorum consisting of four of its members. The chairman shall decide when the votes are equally divided.

CHAPTER XI.—*The Executive Power, its Nature, Duration, and Election.*

ART. 87. The executive power of the Republic shall be vested in a citizen, to be called President of the Republic of Paraguay.

ART. 88. In case of sickness, absence from the capital, death, resignation, or dismissal of the President, the executive power shall be exercised by the Vice-President of the Republic. In case of dismissal, death, resignation, or inability of the President and Vice-President, Congress shall determine the public functionary who shall act as President until the day on which the inability ceases, or a new President is elected.

ART. 89. To be President or Vice-President of the Republic it is required to be a native of the Republic, over 30 years of age, and to profess the Christian religion.

ART. 90. The President and Vice-President of the Republic shall serve for four years and can not be reelected except after the lapse of two presidential terms.

ART. 91. The President of the Republic shall cease to perform his official duties on the same day on which the four years of his term expires; and no event which may have interrupted this period shall be a reason to prolong it in any way whatever.

ART. 92. The President and Vice-President shall be paid out of the national treasury a salary which can not be changed during their term of office. Neither of them shall hold any other position or receive any additional pay or emoluments from the Republic during their term of office.

ART. 93. On taking possession of their offices, the President and Vice-President shall take an oath, to be administered to them by the President of the Senate, and in the presence of Congress, in the following terms: "I, N. N., do solemnly swear, before God and my country, to fulfill faithfully and patriotically the position of President (or Vice-President) of the Republic of Paraguay, and to faithfully observe and cause others to observe the Constitution of the Paraguayan nation. If I fail to do so, may God and my country demand it of me." On the inauguration of the first constitutional President, the oath shall be administered by the Chairman of the Constitutional Convention.

ART. 94. The election of the first constitutional President and Vice-President shall be made by the Constitutional Convention, as provided in article 127, and according to the methods established in article 100 of the present Constitution. Subsequent elections shall be made as follows: Each electoral district shall elect by a direct popular vote a number of electors equal to four times the number of Deputies and Senators to which the district may be entitled in Congress. These electors shall

have the same qualifications as are required to be a Deputy, and shall be elected in the same manner as has been provided for the latter.

ART. 95. Neither Deputies, the Senators, or officials receiving salaries from the Government are qualified to be electors.

ART. 96. The electors shall meet at the capital of the respective departments two months before the expiration of the Presidential term, and shall elect a President and Vice-President of the Republic by signed ballots, one of which shall express the name of the person for whom they vote to be President, and the other the name of the person for whom they vote to be Vice-President.

ART. 97. Two lists shall be made of all individuals voted for for each position, and of the number of votes cast for each. These lists shall be signed by the electors and transmitted sealed (two of them, one of each class) to the Chief Justice of the Supreme Court and to the President of the Senate, who shall keep them unsealed and in deposit. The original record of the election shall be kept sealed in the office of the justice of the peace of the electoral district where it was held.

ART. 98. The President of the Senate shall, in the presence of the two Chambers, open the envelopes containing said lists. Four tellers, elected by lot, shall assist the Secretaries in counting and announcing the number of votes obtained by each candidate for President and Vice-President of the nation. Those having, in each case, the greatest number of votes shall be immediately proclaimed President and Vice-President.

ART. 99. In order that these elections be valid it is required that at least two-thirds of the departments of the Republic shall have taken part therein, and the absolute majority of votes spoken of in the preceding article shall be understood in reference to these two-thirds voting and not to the whole nation.

ART. 100. In case the vote is divided and no absolute majority can be obtained, Congress shall then choose one of the two persons having the greatest number of votes. If this first majority belongs to more than two persons, Congress shall make its selection out of all of them. If the first majority belongs to only one person, and the second to two or more, Congress shall choose from all the persons who obtained the first and the second majority. The selection shall be made by absolute majority and by ayes and noes. If it should happen that no absolute majority is obtained in the first ballot, a second one shall be taken, but the vote shall be confined to select from the persons who in the first ballot obtained the greatest number of votes. If the votes are equally divided, the vote shall be repeated, and if equally divided again, the President of the Senate shall decide. (In the first election the decisive vote belongs to the Chairman of the Constitutional Convention.) The counting of the votes can not be made without the presence of a quorum consisting of three-fourths of the total number of members of Congress.

ART. 101. The election of President and Vice-President of the nation shall be completed in only one meeting of Congress, and the result of the election, as well as the electoral vote, shall be published in the newspapers.

CHAPTER XII.—*The Powers of the Executive.*

ART. 102. The President of the Republic shall have the following powers:

1. He is the Chief Magistrate of the nation, and is entrusted with the management of the executive department of the Government in the whole country.

2. He issues such instructions, rules, and regulations as may be necessary for the execution of the laws, provided that they make no change in the spirit of their provisions.

3. He takes part in the framing of the laws in the manner provided by the Constitution, and approves and promulgates said laws.

4. He appoints, with the advice of the Senate, the Justices of the Supreme Court, and, with the advice of the Supreme Court, all other officials and employees required for the administration of justice.

5. He grants pardons and commutes sentences after hearing the opinions of the respective courts on the subject. Cases in which the Chamber of Deputies is the accusing party are excepted.

6. He appoints and removes, with the advice of the Senate, all diplomatic agents, and appoints and removes, at his will, the members of the Cabinet, the clerks of the departments, the consular agents, and all other officers of the administration whose appointments are not otherwise regulated by the present Constitution.

7. He exercises the right of nominating Bishops for the dioceses of the nation (*derecho de patronato*), said nomination to be made upon presentation of three names by the Senate, with the advice of the Ecclesiastic Senate, or in default thereof, by the national clergy assembled.

8. He grants or refuses, with the advice of Congress, the acceptance of the decrees of the Councils, and of the bulls, briefs, or rescripts of the Supreme Pontiff.

9. He opens every year the sessions of Congress which shall assemble for that purpose in joint session in the hall of the Senate; and in that solemnity he shall submit a Message on the state of the Republic, showing to what extent the promises of reform contained in the Constitution have been fulfilled, and making all such recommendations as he may deem necessary or advisable.

10. He adjourns the ordinary sessions of Congress, or calls Congress to convene in extraordinary session, if a grave necessity of order or progress requires its reunion.

11. He causes the revenues of the nation to be collected and orders them to be disbursed in conformity with the appropriation laws.

12. He concludes and signs treaties of peace, commerce, navigation, alliance, limits, and neutrality, concordats, and all other conventions required for the preservation of good relations with foreign Powers, receives their ministers and admits their consuls.

13. He is the Commander in Chief of all the forces of the nation.

14. He appoints all military officers of the Republic. These appointments shall be made in conformity with the provisions of No. 25, Article 72, of this Constitution, when the position to be filled or the rank to be granted, either in the Army or in the Navy, is of superior class. Appointments made by him on the battlefield shall not require confirmation by Congress.

15. He disposes of the military and naval forces of the nation, and attends to their organization and distribution as the necessities of the occasion may require.

16. He declares war and reestablishes peace with the advice and consent of Congress.

17. He declares in a state of siege one or more places of the Republic in case of foreign aggression; but the state of siege shall cease with the cause which produced it. This power, however, can not be exercised by the President whether in case of foreign aggression or of internal disturbances when Congress is in session, because such power belongs to Congress. The President exercises this power with the restrictions set forth in Article 9.

18. He can ask the heads of all departments and branches of the administration, and through them all other employees, to furnish such information as he may desire, and they shall be bound to do so.

19. He can not leave the capital without permission of Congress. If Congress is not in session he may leave the capital without such permission, only for grave reasons of public service.

20. The President shall have power to fill, during the recess of Congress, any vacancies which may occur in offices requiring the advice and consent of that body; but those appointments shall be considered by Congress in the next session.

ART. 103. All powers not delegated by the present Constitution to the Executive are understood to be denied to it, and be reserved to Congress as the representative of the sovereignty of the people, intrusted with the duty to remove any doubt which may arise in regard to the equilibrium of the three high powers of the State.

CHAPTER XIII.—*The Members of the Cabinet.*

ART. 104. Five Ministers or Secretaries, respectively called of the Interior, of Foreign Relations, of the Treasury, of Justice, Worship and Public Instruction, and of War and the Navy, shall attend to the business of the nation, and legalize with their signatures the acts of the President. These acts without their signature shall have no efficiency. A law shall mark the respective jurisdiction of each department.

ART. 105. Each Secretary is responsible individually for the acts which he legalizes, and jointly for those he has authorized in union with his colleagues.

ART. 106. The Secretaries can not act by themselves except in matters belonging to their own departments.

ART. 107. As soon as Congress opens its sessions the Secretaries shall submit to it a report on the state of the business of the nation as far as their own respective departments are concerned.

ART. 108. The Secretaries may attend the meetings of Congress and take part in the debate, but they shall have no vote.

ART. 109. They shall be paid for their services such a salary as may be established by law, but this salary can not be increased or decreased in favor or to the detriment of the present incumbent.

CHAPTER XIV.—*The Judiciary and its Powers.*

ART. 110. The judiciary power of the Republic shall be vested in a Supreme Court, consisting of three Justices, and in as many inferior courts as may be established by law.

ART. 111. To be a Justice of the Supreme Court, or of any of the other courts, it is necessary to be a Paraguayan citizen over 25 years of age and a person of ordinary learning. The law shall provide the salaries to be paid them in remuneration of their services, and said salary can not be diminished to the injury of the present incumbent.

ART. 112. All Justices and judges shall serve for four years and can be reelected.

ART. 113. The Justices of the Supreme Court and the judges of the inferior tribunals shall be appointed by the Executive in conformity with section 4 of Article 102 of the present Constitution. If the persons nominated by the Executive are not accepted by the Senate or by the Supreme Court, as the case may be, the Executive shall immediately nominate another person. In case of vacancy during the recess of Congress the Executive shall have the power to make temporary appointments, which shall expire at the opening of the next legislative period.

ART. 114. The Judicial Power alone has the right to take cognizance of matters subject to litigation and decide them. Its authority in this respect is exclusive. In no case shall the President of the Republic have power to assume judicial functions, revive terminated cases, stop those which are pending, or interfere with their prosecution in any way whatever. Any executive act of this kind shall carry with it incurable nullity. The Chamber of Deputies can only exercise in this respect the functions assigned to it by Article 50 of the present Constitution.

ART. 115. The Supreme Court is the High Chamber of Justice of the Republic, and in this capacity it shall have the right to inspect and supervise the action of all inferior courts. The Justices of the Supreme Court can be challenged, and shall be held responsible, under the law, for offenses committed by them in the exercise of their functions.

ART. 116. The Supreme Court takes cognizance of the conflicts of jurisdiction which may occur between the inferior courts with each other, or between the courts and the executive authorities.

ART. 117. Defense is free to all before the tribunals of the Republic.

ART. 118. All decisions, whether of the inferior courts or of the Supreme Court, shall be expressly founded on law, and no law shall be applicable to any case if not enacted previously to the date of the facts out of which the case arose. All criminal cases arising out of crimes or offenses which the Chamber of Deputies can not properly prosecute shall be tried by juries as soon as this institution is established in the Republic. All the other powers of the judicial authorities shall be specified by law.

ART. 119. Treason against the nation shall consist only in taking arms against it, or in joining its enemies and giving them assistance and support. Congress shall fix by a special law the punishment to be inflicted for this crime, but the penalty shall not go for any purpose beyond the person of the guilty party, nor shall the infamy of the convict be transmitted to his relations in any degree.

ART. 120. The Justices of the Supreme Court shall take an oath, to be administered to them by the President of the Republic, to faithfully fulfill their duties and do justice well and lawfully and in conformity with the Constitution. On all subsequent occasions the oath shall be administered to them by the tribunal itself.

ART. 121. The Supreme Court shall make proper rules and regulations for its interior government, and shall appoint and remove all its subordinate employees.

CHAPTER XV.—*Reform of the Constitution.*

ART. 122. No reform shall be made of the present Constitution, in whole or in part, during the first five years immediately following its promulgation.

ART. 123. The necessity of the reform having been declared by Congress by a vote of two-thirds of the total number of its members, a call for a convention, consisting of citizens, equal in number to the total number of Deputies and Senators, directly elected by the people, shall be issued. The power of making the reform shall belong exclusively to this body.

ART. 124. To be a member of this convention it shall be necessary to be over 26 years of age and a native citizen. Members of the Cabinet, Deputies, and Senators are disqualified.

ART. 125. The convention shall have power to reform no other provisions than those expressly set forth by Congress in the call, except when the latter states that the whole Constitution is to be amended.

ADDITIONAL PROVISIONS.

ART. 126. The Executive Mansion can not be used as the private residence of the President or of any other public functionary.

ART. 127. After the approval and promulgation of this Constitution, the present Convention shall resolve itself into an electoral college, in order to elect the first constitutional President.

ART. 128. The present Convention shall become a Legislative Congress as soon as the Constitutional Government is inaugurated. It shall remain in session in this capacity for fifteen days, at the expiration of which it shall adjourn, leaving a permanent Committee with such faculties as may be given to it.

ART. 129. The Convention shall appoint the day on which the Provisional Government shall cause this Constitution to be sworn to.

Given at the hall of sessions of the Constitutional Convention in the city of Asunción, on the 24th day of November, in the year of our Lord 1870.

Appendix No. 2.

PRESIDENT HAYES' AWARD.

RUTHERFORD B. HAYES,

PRESIDENT OF THE UNITED STATES OF AMERICA.

To all whom these presents may concern, greeting:

Whereas, pursuant to the fourth article of the treaty of limits between the Argentine Republic and the Republic of Paraguay, of the 3rd of February, one thousand eight hundred and seventy-six, it was stipulated that ownership in or right to the territory between the river Verde, and the principal arm of the Pilcomayo River, including the city of Villa Occidental, should be submitted to the definite decision of an arbitration;

And whereas, by the fifth article of the same instrument, the two high contracting parties agreed to elect the President of the United States of America as umpire to decide as to the right to possess the said above-described territory;

And whereas, the high contracting parties have within the stipulated time presented their invitation to the proposed umpire, which was accepted by him, and have also duly presented their respective memoirs, and the documents, titles, maps, quotations, references, and all the antecedents which they judge favorable to their rights, as provided in the sixth and eighth articles of said treaty:

Now, therefore, be it known, that I, Rutherford B. Hayes, President of the United States of America, having duly considered the said statements and the said exhibits, do hereby determine that the said Republic of Paraguay is legally and justly entitled to the said territory between the Pilcomayo and the Verde rivers, and to the Villa Occidental situated therein, and I, therefore, do hereby award to the said Republic of Paraguay, the territory on the western bank of the river of that name between the Rio Verde and the main branch of the Pilcomayo, including Villa Occidental.

In testimony whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done in triplicate in the city of Washington the twelfth day of November, in the year of our Lord one thousand eight hundred and seventy-eight, and of the Independence of the United States of America the one hundred and third.

[SEAL.]

R. B. HAYES.

By the President:

WM. M. EVARTS,
Secretary of State.

Appendix No. 3.

INFORMATION ON THE COLONIA NACIONAL, FORMERLY PRESIDENT GONZALEZ COLONY.

The Government of Paraguay being anxious to satisfy numerous requests for concessions of lands founded a new colony in the department of Caazapá.

This colony, which covers an area of 12 square leagues, is crossed by the railroad from Asunción to Villa Encarnación.

It has been divided into blocks of 8 squares frontage by 8 squares deep, with a road on each of its four sides. Each block has been subdivided into 4 lots equal to 16 superficial squares (12 hectares).

The ground, consisting of a series of small hills, is traversed by brooks which never dry up, and is covered with virgin groves that contain timber of the finest quality found in the country.

The timber extracted from these groves can be easily transported, on account of the proximity of the railway, and will repay the colonists the expense of cutting. It can be used not only for construction and furniture, but also for firewood and charcoal, which is easily sold in Asunción and in the Argentine Republic.

The nature of the ground of these immense virgin forests, peopled with tropical and subtropical plants attached to the soil by immense filaments that, like monstrous serpents, wind themselves around the great trees, is sandy, dyed red by the oxyhydrate of iron and provided with a great quantity of vegetable earth produced from the decayed vegetation. It is admirably adapted for any kind of cultivation. In the lap of the hillocks sugar cane, tobacco, wheat, maize, potatoes, and peanuts can be raised; on their slopes, coffee and vines; in the valleys, rice and lucerne.

The Spaniards cultivated wheat and the vine during the whole period of their occupation, and these cultivations did not cease until the time of the war.

Vines of from thirty to forty years are still to be found producing fruit, notwithstanding having been reduced to a wild state.

Azara speaks of these cultivations in his description of Paraguay.

One of the greatest advantages is that by alternating the cultivation during a long period the ground is sown continually.

Maize is harvested as often as three times a year.

Appendix No. 4.

PARAGUAYAN LAND LAW OF 1885.

ARTICLE 1. The Executive is hereby authorized to sell the public lands in accordance with the provisions of this law.

ART. 2. The public lands shall be divided into five classes, as follows:

(1) Lands of the first class are those situated in the following departments: San Lorenzo del Campo Grande, San Lorenzo de la Frontera, Ipane, Guarambare, Villosa, Villa Oliva, Villa Franca, Villa del Pilar, Villa Humaita, Luque, Limpio, Emboscada, Arroyos y Esteros, Villa del Rosario, San Estanislao, Villa de San Pedro, Villa de Concepción hasta el Aquidaban, Aregua-Capiata, Ita, Itaugua, Pirayu, Yaguaron, Altos, Atira, Tobati, Caacupe, Barrero Grande, Caraguatay, San José, Itacurubi de la Cordillera, Valenzuela, Ibitimi, Paraguari, Acahay, Carapegua, Tabapy, Quiadi, Ibicui, Caapucu, Quiquio, Mbayapey, Villa Florida, San Miguel, San Juan Bautista de las Misiones, Villa Encarnación, Caazapa, Ihacanguazu, Villa Rica, Itape e Itacurubi del Rosario.

(2) Lands of the second class are those situated in the following departments: Pedro Gonzalez, Laureles, Yabebiry, Desmochados, Tacuaras, Guazucua, Isla Ombu, San Ignacio, Santa Marfa, Santa Rosa, Santiago, San Cosmo, Bobi, Carmen del Paraná, Jesus y Trinidad, San Pedro de Paraná, Ytu, San Juan Nepomuceno, Mbcayaty, Yatahity, Hiaty, Ajos, Carayao, San Joaquin, Unión, Horqueta, San Juan Bautista de Nembucu, Lima, Tacuati, and in the territory stretching from the confluence of the Aquidaban and the Paraguay to the Rio Apa. Lands in the latter territory are to be sold in lots with an area five times larger than the frontage required for lots on the Paraguay River.

(3) Lands of the third class are those comprised between the Pilcomayo and Villa Concepción in the Chaco territory, fronting the Rio Paraguay and at a depth of 10 leagues inland.

(4) Lands of the fourth class are those situated in the Chaco from Villa Concepción upwards to a distance of 10 leagues, and thence 20 leagues of the belt of territory comprised between the Pilcomayo and Villa Concepción.

(5) Lands of the fifth class are those not included in the above classes.

ART. 3. The price of lands of the first class is hereby set down at 1,200 hard dollars in current funds per square league; lands of second class 800 hard dollars; third class 300 dollars; fourth class 200, and fifth class 100 dollars. The price of arable lands shall be at the rate of one hard dollar cash per area of 10,000 square yards, provided that the lot does not exceed half a league square.

ART. 4. The payment of the price of the lands can be effected in four yearly installments; the first to comprise 25 per cent of the total amount and to be paid at the Junta de Crédito Público in legal-tender money or in public fund bonds, with the intervention of the Contador general, and subject to all the other formalities of law. For the other payments three promissory notes to the order of the Junta and payable in one, two, and three years, with interest at 6 per cent, shall be given.

ART. 5. All payments after the passing of this law for sales or leases of land in the national territories shall be made either in legal-tender money or in public-fund bonds.

ART. 6. Purchasers are at liberty to pay their notes at any time with a reduction of 12 per cent per annum from the day of payment.

ART. 7. At the time of recording the deed of purchase, a special mortgage shall be placed in favor of the Government upon the purchased lands.

ART. 8. To pay off the mortgage, wholly or in part, the interested parties shall present at the ministry of interior the notes paid by them, and the necessary orders shall be issued to the Registrador for the corresponding cancellation.

ART. 9 The nonpayment of the notes at their maturity shall give the Government the right to proceed against the property, and the Junta de Crédito Público shall sell it without applying for judicial authorization. Thirty days' notice must be given in the papers that the property is to be sold at auction. If the notes be paid at least a day before the auction, the sale shall be suspended, and the debtor shall be allowed to continue to hold the property, he having to pay, however, a penalty of 12 per cent per year and the expenses of advertisement. Otherwise the sale shall be made for cash, and the proceeds thereof shall be applied (1) to pay the overdue note, with interest, and (2) to pay the further installments, if any, with a discount of 12 per cent per year. The balance, if any, shall be returned to the purchaser.

ART. 10. Pasture lands shall only be sold in fractions, or tracts, of less than half a league, when isolated areas of such a size can be found. In such cases the sales shall be made upon report from the local authority, and the price shall be proportionate to that above established and payable in the same way.

Applicants for lands at El Chaco are bound to purchase areas whose depths are ten times greater than their frontages.

ART. 11. Purchasers of fractions of the Chaco lands shall be entitled to a reduction of 50 per cent on the price stipulated in Article 4, on condition that during the term of payment 25 European families (a family consisting of 3 persons) are settled thereon.

A fraction of land is understood to consist, for the purposes of the preceding article, of an area 1 league front by 10 deep.

ART. 12. In case of several applicants for the purchase of lands, an auction shall be held, and the land shall be sold to the highest bidder, taking as basis the price established by article 3.

To carry this provision into effect, it shall be necessary to publish in the newspapers, for thirty days, the names of the applicants, the locality where the lands are situated, the extent of their areas, and their limits.

The competition shall take place only when the applications have been filed simultaneously.

ART. 13. The following lands are not to be sold: (1) Those lands especially excepted in virtue of previous laws. (2) Those lands the Executive may deem advisable to reserve for colonization purposes.

ART. 14. The following prices are to be paid for leases: \$250 for first-class; \$200 for second-class; \$150 for third-class; \$100 for fourth-class. Payments to be made in legal money or in public-fund bonds. Lands whose sale is reserved under article 13 are excepted.

ART. 15. One year after the promulgation of this law, settlers who may not have purchased the land they occupy, shall pay at the rate of 25 cents per "cuadra" per annum, and shall at the same time be entitled to buy the lands they occupy in preference to any interested party.

ART. 16. The fees to be paid for deeds of purchase executed under the provisions of this law shall not exceed one-fourth of the regular fees legally charged in other cases.

ART. 17. The Executive power is hereby authorized to open roads and highways in the territory of El Chaco.

ART. 18. All other laws and provisions relating to sales and leases of public lands heretofore enacted, and in conflict with the present one, are hereby repealed.

ART. 19. The Executive Power shall make proper rules for the execution of the present law.

ART. 20. Let it be transmitted to the Executive.

Hall of sessions of Congress, July 11, 1885.

Approved July 16, 1885.

By law, approved September 3, 1894, it was provided that whenever the regular prices set forth by the law of 1885 are not obtained in the forced sales of lands, under article 9 of the same, the property shall revert to the Government.

Executive Decree of February 26, 1902, published in the *Diario Oficial* on the 28th of the same month, regarding grants of lands.

ARTICLE I. * * *

ART. II. The country lots shall be granted to none but colonists, whether natives or foreigners, and each family shall have one lot gratuitously. The final title papers shall be given to the grantee at the end of two years of actual occupancy, said time to be counted from the date on which the provisional title papers were issued; but the grantee has to prove, before receiving such final papers, that he, either personally or through his agents, has kept under cultivation, for the said two years, at least one-fourth of the total area of the grant, and also that at the moment of his application for said final papers he has on the same ground, in good state of cultivation, a grove of either 500 white banana trees, 200 orange trees, 300 mandarin trees, 2,000 abacaci trees, or 300 lemon trees, the area of said groves to be a part of the total extent required.

A colonist who has no family shall be entitled to only one-half of a lot.

ART. III. Each colonist shall be bound to fence at least the cultivated portion of his lot.

ART. IV. The squares in the cities and towns shall each be divided into fourteen lots, as follows: The four corner lots shall have a frontage of 15 meters, and a depth of 40 meters; the four lots next to the corner, on the east and west sides, shall have a frontage of 17 meters and 50 centimeters, and a depth of 40 meters; and the two intermediate lots, one on the northern and the other on the southern side, shall have a frontage of 20 meters, and a depth of 50 meters. They shall be numbered from 1 to 14.

ART. V. The city lots shall be given gratuitously to anyone who applies for them, whether colonist or not, on condition that he shall build thereon, within a year, a frame or other building of not less than two rooms, each at least 6 meters high and 5 meters square. If the building is not erected within the appointed time the concessions shall be forfeited. The final title papers shall not be given to the grantee except upon proof that he has fulfilled these requisites.

ART. VI. No lots shall be granted in a square until all the lots of the one next in order have been disposed of. Grantees of these lots shall fence their respective property, and plant trees in line at a distance of 5 meters apart in front of their lots.

ART. VII. The Director-General of Immigration shall reserve in each city or town a number of squares sufficient to build thereon public buildings, or to be turned into public parks.

ART. VIII. As soon as the colonist or settler has selected his lot the local commissioner shall so inform the Director-General of Immigration, transmitting with his report the application of the colonist, which shall be made according to a certain form prepared for that purpose. Upon this application the Director-General shall issue the provisional title papers, setting forth the name, nationality, age, and condition of the colonist or settler, the number of persons composing his family, if he has any, the number of the lot selected by him as set forth in the plat of the colony, the conditions of its delivery, its dimensions, its boundaries, its area, and the class of fruit trees to which Article 2 of the present law refers when speaking of the lots in the country.

The report of the Commissioner shall set forth the day and hour on which the application was filed, whether the lot selected can be granted, and, in case of country lots, whether the applicants therefor are really agriculturists, and whether they have the means and attitude necessary for the cultivation and settlement which they are bound to make, said requisites to be proved to the satisfaction of the said authority before the colonists being granted the provisional title papers.

ART. IX. The provisional title papers so issued shall be delivered to the applicant, upon his receipt, through the commissioner of the colony, who shall keep in his office a register, in which they shall be recorded. There shall be in the said registry book one page for each lot, and all the facts and circumstances relating to the latter shall be recorded thereon. * * *

ART. X. Colonists shall not be allowed to sell or transfer in any manner or form their provisional title papers, and the concession shall be forfeited if the conditions thereof are not complied with within the time required by this decree.

ART. XI. A colonist who has made application for lots in one colony shall not obtain any concession in another, unless he waives all his rights to the former.

ART. XII. No one shall make use of the right granted by law to acquire by purchase additional lots, unless he proves himself capable of properly cultivating them. He has also to prove his good moral character and to have secured the final title papers of the former lot granted to him.

ART. XIII. The concession of lots and the issuing of title papers under the provisions of the foregoing article shall be made exactly on the same terms and in the same form established by Articles II, VIII, and the following of the present decree.

ART. XIV. Any colonist incapable of working or notoriously objectionable for his bad habits may be removed from the colony by the Director-General of Immigration, upon competent proof. If any indemnification is due him for any acquired rights or for his work or property, the payment thereof shall be made previously to his removal.

ART. XV. No store shall be opened in a colony during the first three years of its establishment, unless with the permission of the Director-General of Immigration; but restaurants and places where alcoholic liquors are sold shall never be permitted.

ART. XVI. All questions between the colonists regarding their rights to any lot before the final papers thereto are issued and all questions arising between the colonists and the commissioner or authorities of the colony shall be decided by the Director-General of Immigration, from whose decision an appeal can be taken to the Executive power.

ART. XVII. The colonists shall be bound, for statistical purposes, to furnish all the information which may be requested of them regarding the condition and yield of their crops or the industries in which they may be engaged.

ART. XVIII. The present decree shall be printed in pamphlet form, and a copy of the map of the colony shall be appended to it. The pamphlet shall be distributed among the settlers.

ART. XIX. The provisions of the law of colonization shall be observed in all cases about which no special provision has been made in the present decree.

NOTE.—By a decree of March 10, 1902, the provisions of the foregoing decree have been made applicable to all the colonies now established or which may be established in the future in the territory of the Republic.

Appendix No. 5.

REPORT ON YERBA MATE OR PARAGUAY TEA.

[By United States Consul Baker, of Buenos Ayres.]

I am in receipt of a number of letters from parties in the United States making inquiries in regard to what is known in South America as yerba mate or Paraguay tea, some requesting me to send specimens of the article for trial, others asking in reference to the possibility of cultivating the plant in the United States, and others still desiring to be informed if it would pay to import it as an article of commerce. I have answered some of these letters, but it may serve a better purpose for me to communicate what I know in regard to the matter in the form of a report to the Department of State, through which medium it will secure a larger publicity.

DEMAND FOR THE TEA IN THE ARGENTINE REPUBLIC.

I would premise by stating that the article referred to forms one of the largest items in the foreign commerce of the Argentine Republic, and occupies pretty much the same place in the household economy here that tea or coffee does at home. The demand for it which exists in this country (to say nothing of Chile, Bolivia, Peru, and Brazil, where it is perhaps even more generally used) will be readily seen from the custom-house returns.

Besides the large quantities which are produced in the Argentine territory of Misiones, the following table, compiled from figures obtained from the national statistical reports,^a shows the quantities and values of the imports of yerba mate into the country during the years named:

Year.	Imports of yerba mate.			
	From Paraguay.		From Brazil.	
	Amount.	Value.	Amount.	Value.
	<i>Kilos.</i>		<i>Kilos.</i>	
1876.....	1,607,368	\$547,407	6,650,054	\$1,090,112
1877.....	2,815,190	421,814	8,826,174	1,037,657
1878.....	2,828,135	419,645	6,411,846	749,262
1879.....	3,061,030	516,419	10,170,666	1,266,088
1880.....	4,951,555	628,140	9,019,510	1,064,827
1881.....	5,173,277	691,193	8,354,413	1,075,867

^a Estadística del Comercio de la República Argentina, 1876-1881.

By way of comparison, I would state that during the same time the following were the imports of the Chinese tea and coffee into the Argentine Republic:

Year.	Imports of tea.		Imports of coffee.	
	Amount.	Value.	Amount.	Value.
	<i>Kilos.</i>		<i>Kilos.</i>	
1876.....	195, 199	\$189, 940	1, 245, 097	\$314, 381
1877.....	312, 876	296, 015	1, 288, 525	375, 505
1878.....	195, 915	189, 306	1, 401, 202	421, 943
1879.....	307, 564	301, 977	1, 456, 381	446, 299
1880.....	280, 806	274, 549	1, 804, 784	498, 588
1881.....	288, 948	272, 858	1, 886, 553	538, 356

It will be seen by these figures that the amount of yerba mate imported into the Argentine Republic every year is about six times greater than the total amount of tea and coffee combined, and that the value of the same is twice as great as that of both together, to say nothing of the amount which is produced in the country, amounting to perhaps half as much again, thus entitling it to be called the Argentine national beverage.

WHAT IS YERBA MATE?

This yerba mate ^a (*Ilex Paraguayensis*, De Candolle; *Ilex mate*, Aug. St. Hilaire; *Peoralia glandulosa*, Limé) is a species of holly, and grows in abundance between the twentieth and thirtieth degrees of south latitude, but especially in the neighborhoods of the Upper Paraná and Uruguay rivers. It is a tree of the size and appearance of the orange, but more delicate, and, like it, it retains its leaves during the entire year. The leaf is oval, not so long as that of the orange, of a dark-green color of metallic brightness, with very marked veins. The blossom is not very conspicuous, and leaves behind it a berry containing small seeds of fatty albumen.

Like all other trees of the holly family, the mate contains a bitter element, and to this slight bitterness is added a peculiar and rather agreeable aroma, both in the leaves and in the young twigs. These are the parts of the tree or shrub which, when gathered and dried, are known as "yerba mate," and which is so generally used as a drink or tea throughout this part of South America. This beverage is not a discovery made by the Spaniards, who settled the country, but it seems to have been used by the Indian tribes "since time whereof the memory of man runneth not to the contrary." The Guarani Indians, who in early times inhabited the banks of the Uruguay and Paraná rivers, imparted the secret to their conquerors, who were not slow in appreciating its virtues and adopting its use, until it has become a leading article of commerce, and has its place with the lares and penates of every native household.

WHERE IT COMES FROM.

The yerba mate, as an article of commerce, comes from three principal sources, to wit: Paraguay, the Brazilian province of São Paulo, and the Argentine territory of Misiones. The most highly esteemed comes from Paraguay, the next is that from Misiones, while the yerba of São Paulo, shipped from Paranagua, occupies the lowest rank. Formerly, and especially during the time that Jesuits had their seat in this country, the harvesting was done with particular care, the Indians under their direction separating the leaves according to their different degrees of development, and

^a Description géographique et statistique de la confédération Argentine; par. V. Martin de Moussy; vol. 1, pp. 428 et seq.

laboriously removing the little twigs and the stems and ribs of the leaves. In fact, it was in many places cultivated artificially and the different missions had their own plantings of "yerbales," the trees being carefully tended and protected. Thus they gave more abundant harvests and the leaves ripened more completely.

But all the formerly cultivated "yerbales" have disappeared, and those that remain in the deep forests of the Upper Paraná are, many of them, quite worn out.

Only in Paraguay has the old method been even partially continued; and the yerba mate from there, although much dearer in price, is really more economical, as it is stronger and more aromatic.

PARAGUAY MATE.

In Paraguay the Government has the monopoly of the sale of all the yerba mate which is produced in the country.

The "yerbales" are spread over almost the entire surface of the Republic; but the most famous now are those of Tacuru-pucú, a desert sort or a place not far from the great falls of the Upper Paraná River and the southern slopes of the Sierra de Maracayú. It is gathered and cured, sometimes under the superintendence of the Government officials of the departments in which it is found, and sometimes by private individuals who receive permission to work on prescribed conditions and deliver the produce to the Government.

In the more remote places, and especially in the neighborhood of hostile Indians, the Paraguayan Government generally employs its soldiers in the work of harvesting the yerba mate. When worked by officials the workmen are drafted from the neighborhood, as for any other public work, and are paid in cured yerba, or in goods, such as wearing apparel, etc., with which the Government keeps itself supplied for that purpose, and on which it gains the usual percentage. When worked by individuals the general rule is to allow them one-third of the yerba cured, they paying all expenses.

ARGENTINE MATE.

The "yerbales" of the Misiones, now under cultivation and worked, are for the most part situated in the deep bend which the Uruguay River makes toward the northwest of the province of Rio Grande do Sul, belonging to Brazil; but there are others equally productive in the neighborhood of the village of San Xavier, from which place the yerba mate is sent to Itaquay, a somewhat important town on the Uruguay, whence it comes by rivers to this port.

As the Argentine Government makes no proprietary claim to the product, the "yerbales" of western Misiones are all worked by individuals, who have no further concern for them than to make all they can out of their labor. Were the forests better protected from spoliation by the Government the industry, now that Misiones has been organized under a territorial government, might acquire a great development.

HARVESTING OF THE YERBA.

The harvesting of the yerba mate is a very simple process. Before commencing the work the patron or superintendent selects his location, having in view the quantity of material and the facility of transportation, and erects the necessary buildings, consisting generally of a shed 50 or 60 feet in length for storing the goods and provisions that he may have and the yerba that he collects; also a number of small huts or dwellings for the workmen, and the frames (*barbacoas*) upon which the material is dried. These are constructed of poles and withes from 15 to 20 feet square, with arched or angular roofs and firm, even floors made of clay, extending 6 or 8 feet beyond the frames on all sides, for the convenience of pulverizing the material after it is dried. Near each *barbacoa* is erected a stand or elevated seat, from which the foreman may watch the drying process and make such changes in the disposition of

the material as he may deem necessary. Each workman climbs a tree and with a large knife or facon cuts off all the small branches bearing leaves until the tree is quite stripped. These branches, made up into small bundles, are borne to the drying frame and lightly heaped on top. Under this is then lighted a clear though not very hot fire, under the influence of which the yerba mate is gradually dried.

It is important that the brush used for fuel should contain no bad element, but, on the contrary, should be aromatic, upon which the quality of the yerba in a great measure depends.

This toasting process occupies from thirty-six to forty-eight hours, the fires being kept up from daylight till 7 or 8 o'clock p. m. If it rains upon the material while in process of drying, it is necessary to spread it out and redry it; and yerba which has been so made is not considered so good for preservation, and is generally sold for home consumption. When the drying process is completed the fire is removed and the floor is swept off, and the dry material, being worked through the frame, falls to the floor and is pounded with flat wooden instruments until reduced to the condition of a coarse powder, and it is gradually removed to the storehouse as it becomes so.

Sometimes it is pounded in a wooden mortar, or it is put through a sort of crushing mill, which consists of a circular stone worked in a trough by a mule or horse. The yerba is then packed in hide bales, made by cutting the raw hide even, doubling it lengthwise and sewing up the sides with hide thongs. These bales are first softened in water, and are then packed with the yerba, which is done by settling it well with a heavy wooden pestle, and gradually closing up the open end until the bale will contain no more. The hide then contracting, as it dries, increases greatly the compactness of the whole, and it is ready for transportation. These bales are termed *tercios*, the larger ones containing from 200 to 250 English pounds. They are loaded either on horseback or in carts, according to the localities, and sent to the ports of shipment on the rivers.

The workmen are paid at the rate of about 25 cents per arroba (25 pounds) for the cured yerba as it is brought from the *barbacoa*, and a packer makes about 6 cents per arroba, the hide being furnished by the employer.

Where the "yerbales" are worked by private parties the gatherers of the yerba sell their crop of the day to the proprietors of the crushing mills, which are generally established near by.

The packing of the yerba in hides, which requires particular care, is done principally in the neighboring towns or in establishments made especially for the purpose.

I would state that the leaf of the yerba mate, or the tree, is evergreen; can be gathered all the year round. It is better, however, at the end of summer, though very little notice is taken of this circumstance.

The greater portion of the yerba mate produced in the southern provinces of Brazil is exported from the port of Paranagua, on the Atlantic coast. In Paraguay no yerba mate is permitted to be exported except from the city of Asunción, as the trade is a monopoly of the Government and the greatest source of its national resources. It comes down in the river boats either to this city or Montevideo, whence what is not required for local consumption finds a market elsewhere.

The duty on yerba mate imported into the Argentine Republic is 6 cents per kilogram on the customs valuation, which is 13 cents per kilogram on that imported from Brazil and 15 cents on that from Paraguay.

HOW YERBA MATE IS USED.

As I have stated, the use of the yerba mate is general among the native population of the Argentine Republic, as well as of all the adjacent countries.

While coffee and Chinese tea are to some extent adopted by them in Buenos Ayres, in the interior the universal beverage is Paraguayan tea; and in many cases foreign-

ers who have lived in the country for years become equally fond of the drink. The taste, however, is, to a great extent, an acquired one, and most Europeans who live here prefer the Chinese tea.

In Paraguay the yerba mate is almost exclusively made use of, and even in the interior of Brazil, in spite of the fact that coffee is the leading article of production, there seems to be a preference for yerba mate.^a

The analysis shows that yerba mate contains caffeine, the principle existing both in coffee and Chinese tea, and it is claimed that it not only possesses the mildly exhilarating qualities of the Chinese plant, "which cheers but not inebriates," but that it also has other virtues which make it more valuable as a tonic or strengthening beverage. Indeed, when used to excess, it even produces a kind of intoxication. The preparation of the beverage, though very simple, is very different from that of tea. A small spoonful or pinch of the powdered yerba is placed in a kind of gourd, which is called a mate, and in which is previously inserted the *bombilla*, a silver tube, the lower bulb of which is pierced with very small holes (small to keep the powder from passing in), and which serves to suck the liquid. Water boiling hot is then poured in, and the tea is ready for use. The true amateurs of the beverage, in the country principally, take their mate without sugar (*mate amargo*). In the city, however, it is taken with powdered sugar, which is put into the gourd each time that it is replenished. It is also sometimes flavored with orange or lemon. The mate is imbibed very much as we would take a "sherry cobbler," though the process is considerably slower from the fact that it is taken very hot, and it requires great care for an inexperienced person to keep from scalding his tongue and throat. When tepid the mate loses its aroma and becomes insipid. Some of these mate cups are beautifully worked in figures and bound in silver, while the *bombillas* are also handsomely wrought, the whole costing many dollars.

In nearly all native houses the mate circulates almost continuously all day long. It is the offering made to all guests, and the same mate cup and tube do service for all who are present, each one as the cup is replenished taking turns at the *bombilla*. To refuse to take mate when offered would be considered rude, if not an insult to country hospitality.

Many persons, especially ladies, give themselves up to the use of mate, drinking it in excessive quantities, and thus contracting a lazy habit, which, as I am informed, in time weakens the digestive organs, causing loss of appetite, and consequently debilitating the vital economy.

In traveling, however, its virtues are very conspicuous, since by its use hunger is in a remarkable manner postponed. An Argentine *gaucho*, for instance, will take a mate or two in the early morning, and gallop his horse all day long, requiring nothing more in the way of food or drink until nightfall, when he will break his fast with the only "square" meal of the day.

So, too, with the drivers of the long caravans of bullock carts, which traverse the limitless pampas, laden with wool and hides for Buenos Ayres, or with return cargoes of assorted merchandise for the country stores (*pulperías*). Before breaking camp in the morning all hands will indulge in a general round of mate drinking, and they will not make a halt for refreshments until they go into camp again at night-

^aSome attempts to cultivate Chinese tea in São Paulo and Minas proved a sad failure, as the quality produced was a very inferior one; whether from the effects of the climate or bad management I can not tell. Certainly the patient, slender-fingered son of the "Celestial Empire" seems to be better suited to the subtle work of gathering and sorting the leaves than the negro. But they have an excellent equivalent for it in Brazil, the Paraguay tea (*Ilex Paraguayensis*), also called "herba mate" or "congonha," growing wild everywhere in the southern provinces of Brazil, and forming already a considerable article of export. An infusion of the dried and pounded leaves, imbibed through a delicately plaited little tube (*bombilla*), is the indispensable natural beverage of all classes, etc. (The Amazon and Madeira Rivers: Sketches and Descriptions from the Notebook of an Explorer, by Frank Keiler, Engineer, London, 1874.)

fall, when they will partake of a substantial dinner of fresh beef or mutton, roasted on spits in front of their camp fires. But inveterate mate drinking is not confined to old ladies and the denizens of the pampas. It has "come down from a former generation" as a sort of official institution which has become venerable with time and must not be interfered with. And every day in all the public offices, both of the nation and of the province, the hours of siesta^a are set apart, to a great extent, for an indiscriminate bout at the mate cup, all employees, from the grave minister of government to the porter who guards the door, taking their turns at the *bombilla*, much to the delay, sometimes, of those who have business to be dispatched^b. The habit of mate drinking is easily acquired, and I do not hesitate to say that is very agreeable, especially in the morning, upon rising, or in the middle of the day between meals. There is no doubt, however, that it weakens the appetite if it is taken before eating; but even Chinese tea will do that.

CAN THE PLANT BE ACCLIMATIZED IN THE UNITED STATES?

So much for the yerba mate—its growth, its harvesting, its marketing, and its use in the Argentine Republic.

The question now recurs, in answer to the various letters I have received on the subject, whether it would be feasible to undertake to introduce this Paraguayan tea, either by acclimatizing the plant or by importing the product, as an article of domestic use into the United States.

(1) Can the plant (*Ilex P.*) be grown in the United States? In my opinion, there is no reason why it would not thrive in any of the extreme Southern States and in California. The success of the Jesuits in establishing artificial *yerbales* at Yapecú proves that it will flourish in the thirtieth degree of south latitude, and I do not see why it could not be cultivated up to an equal latitude in the United States. I have seen it stated that the plant has been tested on the island of Martín García, opposite Buenos Ayres, in the river Plate, and M. de Monssey, the French savant, to whose investigations I am indebted for much information on the subject, thinks its cultivation could be undertaken anywhere in the Argentine Republic as far south as the province of Corrientes with success. I am informed that the yerba grows perfectly well from the seed, but it is delicate for the first few years and needs the best of care and arbor culture; but, from what I have seen of the yerba forests of Paraguay, I should judge that when once well set there would be no further trouble so far as the plantations are concerned; but whether the leaf would retain its delicate aroma and other essential qualities under different conditions and surroundings is a question which can only be solved by actual experiment. The plant, however, seems to prefer a sub-tropical climate, and I would not advise anyone to undertake its cultivation on a grand scale in the United States without first experimenting with it; and even if its cultivation were attempted, it might result as the various schemes for introducing the Chinese plant have done.

(2) I would therefore suggest to parties who are desirous of attempting the inauguration of the use of the yerba mate in the United States that they confine themselves

^a "Siesta" is the hottest part of the day and the time for napping, generally from 1 to 3 o'clock, but it is not so universally indulged in here as in the "campo." In many places business is entirely suspended during these hours.

^b I have before me the *Prensa*, a newspaper of this city, of the date of November 29, which, in an article on "Official abuses," is quite severe on this habit of official mate drinking. I translate the following paragraph:

"In the public offices the official only attends the public from 2 to 3 o'clock or from 3 to 4, in order that nobody may interrupt him at the hour of taking mate. When mate is suppressed in the public offices the Government will lose the aspect of town grogshops (*despachos de aldea*), and the administration of business will gain much in promptitude and regularity. Messieurs ministers and chiefs of bureaus, we denounce mate as a grand conspirator against the public interests, and especially against labor in the public offices."

for the present to the importation of the article. There is no difficulty in the way of doing this. The article is so securely packed in hide bales that it will stand any amount of hard handling without detriment, while the steamers leaving this port for New York, to say nothing of sailing vessels, if preferred, would deliver it in less than a month from the date of shipment.

The price of the yerba in this market is 16 cents per pound for that from Paranagua (Brazil), and 32 cents for that from Paraguay. Where it is purchased in quantities (in the tercios) it can be obtained for \$4.60 to \$4.80 per arroba of 25 pounds, and in bags at \$2.20 to \$2.80 per arroba. That from Brazil, in barrels, sells for about \$2.50 per arroba.

It must be borne in mind, however, by those who propose to engage in the trade that they will have to educate their customers into the manner of preparing the tea, and especially into the mysteries of the mate gourd and the tube. Indeed, perhaps they would have to order a shipment of the articles in question along with the mate, since they are entirely unknown to the trade in the United States.

Any further correspondence on the subject will be duly turned over by me to those who deal in the yerba.

Appendix No. 6.

DIRECT-TAX LAW OF PARAGUAY, DECEMBER 22, 1890.

ARTICLE 1. On and after January 1, 1892, all lands and buildings belonging to private parties shall be subject to a direct tax of \$3 per \$1,000 per annum on the assessed value.

ART. 2. Rural property shall be valued without taking into account the crops or buildings thereon. Rural property shall be understood to be, for the purposes of this article, all property situated outside the commons of the villages.

ART. 3. The following are exempt from direct taxation:

(1) Property not exceeding in value \$1,000, unless the owner has property to the same amount in any other place.

(2) National and municipal property, churches of any denomination, and buildings intended for schools, hospitals, houses of correction, and charity.

(3) Buildings in construction, in which case the lot only shall be taxed.

(4) Property excepted by special laws from the payment of the tax.

ART. 4. The valuation of the property and the payment of the tax shall be made at the time and in the manner fixed by the Executive Power.

The valuation made shall continue in force during the term of the law, and the payment may be made in two installments.

ART. 5. Appeals against the valuations may be taken to the board of public credit, whose decision shall be final.

ART. 6. Those who fail to pay the tax within the limit fixed by the Executive Power shall be fined an amount equal to the tax due.

ART. 7. The payment of the tax shall be enforced through summary proceedings before the justice of the peace by the tax collector authorized for that purpose by the Executive Power; the certificate of the board of public credit being sufficient evidence of delinquency.

ART. 8. No other defense shall be admitted than lack of personality, forgery of the titles, or previous payment.

ART. 9. In the case referred to in article 7 the presence of the owner is not necessary; if absent, the proceedings to enforce the payment shall be conducted in the following manner:

(1) All notices shall be served on the persons in charge, even if only incidentally, of the lands and buildings, without regard to their relations to the owner.

(2) On lessees or occupants; in default of either, a person shall be named by the court to represent the absent owner.

ART. 10. No deed of transfer of property shall be executed without the previous presentation of the certificate of the board of public credit, showing that all taxes thereon have been paid.

ART. 11. The board of public credit shall not issue the certificate mentioned in the preceding article unless the interested party presents at the same time the certificate of the accountant-general of the mortgage office, in which will be stated with exactitude the name of the buyer and seller, the site, limits, price, and area of the property to be sold.

Public notaries shall render to the board of public credit a monthly statement of the deeds of transfer executed before them during that time, the statement to be accompanied with all the information required from the mortgage office. Violators of these articles shall suffer the penalty of suspension from office for a period of six to twelve months and a fine equivalent to ten times the amount of the tax due.

ART. 12. The payment of fines referred to in the preceding article shall be enforced by the board of public credit by summary proceedings.

ART. 13. The purchase price of lands or buildings shall be indisputable as regards valuation during one year for both the government and the owner, unless the land shall have been built upon or improved, in which case the existing buildings will be valued according to the articles of this law.

ART. 14. The Executive Power is empowered to nominate the necessary staff for the execution of this law, and to fix the recompense for their work.

ART. 15. The tax established by this law shall continue in force for the term of two years.

ART. 16. The Executive Power shall make the rules and regulations necessary to carry the provisions of this law into effect.

ART. 17. Communications will be made to the Executive Power.

Appendix No. 7.

COTTON CULTIVATION IN PARAGUAY.

[From the "Asunción Agronomic Review".]

There are indications that cotton cultivation in Paraguay may be again as prevalent and general as it was in former times; and the opportunity for a movement of this kind seems now to be propitious, because of the constantly increasing price paid for cotton in the European markets, and because of the security that even at the present prices, firmly established in the market, the cultivation of cotton should be remunerative.

The "Review" has been consulted in regard to the advisability of importing foreign classes of this plant. In its No. 1, Vol. I, the "Review" set forth in full the results, really unsurpassable, of the domestic cotton plant, a bush belonging to the species *Gossypium barbadense*. The results which were secured in the experiments made with it showed a production higher than the highest ever obtained in the world on fertile grounds of virgin land. In years of good rains, and on a soil of volcanic origin, consisting of clay, iron ore, and humus, the production in the second year has been at the rate of 1,026 kilograms of clean cotton per hectare, this rate having fallen to 954 kilograms per hectare in the third year.

The "Review" does not advise the owners of these extremely fertile lands to change the domestic cotton plant, productive, hardy, and so easy to cultivate, for any other foreign variety.

But the Paraguayan cotton plant does not give such good results on sandy grounds, which are subject with greater or lesser frequency to the evils of droughts. In these cases the cultivation of certain foreign varieties of the cotton plant seems to be indicated. The particular variety known by the name of herbaceous cotton, and all the others which have become famous in the United States of America for the beauty of their fiber and the abundance of their production, should be especially recommended.

The results obtained at the Agronomical School at Paraguay in recent experiments were as follows:

The soil on which they were made was essentially sandy, with some quantity of iron ore and very little humus. It had been under cultivation for many years and had become, it might be said, exhausted. Neither maize nor ricinus could be raised on it, and beans and mandioca were grown only precariously and in small quantities.

As the experiments were made for the purpose of ascertaining the advantages which could be derived from exhausted grounds, no fertilizer of any kind was used; and in the planting of the seeds the same area was allotted to each different variety. The year proved to be quite dry and unfavorable, and at the end thereof the results were as follows:

Peterkin	211.8	Prince Albert	78.0
Hawkins	134.5	Paraguay (ordinary)	60.5
Texas Burr	126.5	Cook	21.8
Duxon	111.1	Georgia (Long)	13.0
Sea Island	87.2		

As shown by these figures, the differences were striking. The experiments in regard to the Georgia Long variety, so famous in the United States of America, proved beyond doubt that nothing can be expected from it in grounds of this kind, but it may possibly give better results in more fertile land.

The Peterkin and the Hawkins varieties proved superior to all others, not only for the quantity, but for the beauty and fineness of the cotton produced. The pods were admirable.

The varieties of herbaceous cotton yielded in the second year a crop as abundant as in the first; but the pods were not so handsome. On the third year they perished, after yielding almost nothing. It is to be believed that in fertile lands it will last longer; but the best way will be to renew the planting every two years.

The Texas Burr variety is stronger, more resistant, and in all respects a very acceptable one.

The Sea Island variety would have, no doubt, yielded better results in some other kind of ground, where the sand is mixed either with humus or iron ore.

Appendix No. 8.

TRADE-MARK LAW

[July 6, 1889.]

TITLE 1.—*Ownership of trade-marks.*

ARTICLE 1. Trade-marks are names of objects or of persons, stated in a special form, emblems, monograms, engravings or prints, seals, vignettes, reliefs, letters and numbers of a particular design, receptacles or wrappers, and any other signs intended to distinguish manufactured products or articles of commerce.

ART. 2. Trade-marks can be affixed either upon the receptacles, wrappers, or the articles themselves.

ART. 3. The following shall not be considered as trade-marks:

1. Letters, words, names, or titles used or to be used by the Government.
2. The form or shape given to the product by the manufacturer thereof.
3. The color of the product.
4. Words and expressions which have become of general use.
5. The designations usually employed to indicate the nature of the product, or the class to which it belongs.
6. Drawings or expressions contrary to good morals.

ART. 4. The absolute ownership of the trade-mark, and the right to oppose the use of any other which may directly or indirectly produce confusion between the products, belong to the manufacturer or merchant who has complied with the provisions of the present law.

ART. 5. The absolute ownership of a trade-mark applies only to the kind of article specifically protected by the latter.

ART. 6. The use of the trade-mark is optional, but it may be made obligatory when required for the public benefit.

ART. 7. The ownership of a trade-mark is hereditary and can be transferred by contract or by last will and testament.

ART. 8. The sale or transfer of the establishment where the article is produced carries with it the trade-mark, if not provided otherwise. The assignee shall have the right to use the trade-mark, even if consisting of the name of the assignor or of some one else, as freely as the assignor or seller himself might personally have done, with no other restrictions than those expressly set forth in the deed of sale or assignment.

ART. 9. The transfer of a trade-mark shall have to be recorded at the office where it is registered. Otherwise the right to use it shall not be conveyed to the purchaser or assignee.

ART. 10. No trade-marks shall be considered to be in actual use, for the purposes of ownership under the present law, except those for which the office has given a proper certificate.

ART. 11. The protection of the rights of the manufacturer or merchant respecting the exclusive use of the trade-mark shall last only ten years, but may be extended indefinitely for equal periods, provided that all the formalities required are duly complied with and the tax to be established elsewhere in this law is duly paid.

TITLE 2.—*Formalities for acquiring the ownership of trade-marks.*

ART. 12. All those wishing to secure the ownership of a trade-mark shall apply for it to the Board of Public Credit, in which a bureau of patents and trade-marks shall be established.

ART. 13. Applications for trade-marks shall be accompanied by the following papers:

1. Two copies of the trade-mark for which application is made.

2. Description, in duplicate, of the trade-mark, if it consists of figures or emblems, indicating the class of objects for which the trade-mark is intended, and whether it applies to manufactured products or articles of commerce.

3. A receipt showing that the amount of the tax established by article 19 of the present law has been paid in the office of the Treasurer of the Board of Public Credit, with the approval of the Comptroller of the Treasury.

4. A power of attorney executed in due form of law in case the application is not made personally by the interested party.

ART. 14. A record of all the applications filed shall be kept in a book, the pages of which shall be numbered and signed by the Secretary of the Treasury, briefly stating the contents of the application and the date and hour of filing.

This record shall be signed by the President of the Board of Public Credit, or in his absence by another official of the Board, the Secretary and the applicant; and the latter shall be given, if he so desires, a certified copy thereof, written on a sheet of 50-cent stamped paper.

ART. 15. Preference for the ownership of a trade-mark shall be governed by the day and hour on which the application was filed.

ART. 16. A certificate of trade-mark to be issued by the Bureau of Patents shall consist of a certified copy of the decree by which it was granted, accompanied by a duplicate of the description and the drawings. This certificate shall be issued in the name of the Nation, and shall be authorized by the signatures of the President and Secretary of the Board of Public Credit, and with the seal of the Board.

ART. 17. An appeal may be taken to the Secretary of the Treasury within the period of ten days against the decision of the Board of Public Credit denying the ownership of a trade-mark; and the Secretary of the Treasury shall confirm or repeal the decision after hearing the Solicitor-General.

ART. 18. The Board of Public Credit shall keep a book in which all the concessions of trade-marks shall be inscribed in their regular order; and the President of the Board shall send every three months to the Secretary of the Treasury a statement of the certificates granted and denied, giving in each case the respective dates.

These statements shall be published in the newspapers every three months.

ART. 19. A tax or fee of \$50 shall be paid for the registration of all trade-marks and the certificate thereof.

For any certified copy of the said certificates which may be desired thereafter an additional fee of \$5 shall be paid, this fee not including the value of the stamped paper, which shall be in this case \$1 for the first folio and 25 cents for each additional one.

ART. 20. The trade-marks for which certificates have been issued shall be kept in the archives of the Board of Public Credit.

In case of litigation a drawing of the trade-mark or of any section thereof shall be produced before the court as evidence of its description.

ART. 21. Trade-marks and the descriptions thereof shall be kept in the Bureau at the disposal of anyone wishing to examine them.

TITLE 3.—*Names of merchants and industrial establishments.*

ART. 22. The name of the merchant, firm, or business house dealing in a certain kind of article shall constitute industrial property for the purposes of the present law.

ART. 23. If a merchant desires to engage in an industry already established by another person with the same name, or with the same conventional designation, he shall have to adopt such a modification of the said name or designation as to render it visibly distinct therefrom.

ART. 24. If a person who has been injured by the infringement of a trade-mark does not make claim within one year, to be counted from the date on which the infringement began, his action shall be barred by limitation.

ART. 25. Joint stock corporations shall have a right to the name used by them and shall be subject to the same limitations as private individuals.

ART. 26. The right to the exclusive use of a name as industrial property shall terminate together with the existence of the business house or branch of industry bearing the same.

ART. 27. It shall not be necessary for the exercise of the rights granted by this law to register a name unless it forms part of the trade-mark.

TITLE 4.—*Penalties.*

ART. 28. Fines ranging from \$20 to \$500, and imprisonment from fifteen days to one year, shall be imposed on the following:

1. Those who forge or in any manner alter a trade-mark.

2. Those who affix upon their products or articles of commerce the trade-mark of some other person.

3. Those who knowingly sell, offer for sale, consent to sell, or circulate articles on which a forged or fraudulent trade-mark has been affixed.

4. Those who knowingly sell, offer for sale, or consent to sell forged trade-marks, and those who sell authentic marks without the knowledge of their owner.

5. All those who with fraudulent intention affix, or cause others to affix, upon merchandise a title or any other false designation relating either to its nature, quality, quantity, number, weight, or measure, or the time or country in which it has been manufactured or shipped.

6. Those who knowingly sell, offer for sale, or consent to sell merchandise bearing the false titles and designations spoken of in the preceding paragraph.

In cases of second offense the penalty shall be doubled.

ART. 29. It shall not be necessary to constitute offense that the forgery embraces all the objects which should have been marked, it being sufficient when it appears on only one object.

ART. 30. The simple attempt shall not be deemed punishable or to entail civil responsibility, but it shall be sufficient to order the destruction of the instruments which would have served for committing the forgery.

ART. 31. Those who sell or offer for sale merchandise bearing a usurped or forged trade-mark shall be bound to give to the merchant or manufacturer who is the owner thereof complete information in writing of the name and address of the person or persons from whom he purchased or obtained the merchandise, and also of the time which they began to sell it; in case of refusal, they can be judicially compelled to do so under penalty of being considered as accessories of the offender.

ART. 32. All merchandise bearing forged trade-marks which may be found in the possession of the forger or of his agents shall be confiscated and sold, and the proceeds of the sale shall be applied, after deducting the costs and indemnities established by this law, to meet the expenses of the national schools.

ART. 33. Forged trade-marks found in the possession of the forger or his agents shall be destroyed, together with the instruments which might have been used in making the forgery.

ART. 34. Criminal proceedings shall be instituted only at the request of interested parties, but after they are started they may be continued by the Government attorney.

The complainant may abandon his action at any time during the proceedings up to the moment of pronouncing the sentence.

ART. 35. Those who have been injured by violators of the present law have the right to sue for damages the authors and abettors of the offense.

Condemnatory sentences shall be published at the expense of the condemned party.

ART. 36. No criminal or civil action can be instituted after a lapse of three years to be counted from the date on which the offense was committed or repeated, or after one year to be counted from the date on which the owner of the trade-mark became acquainted for the first time with the fact.

Interruptions of the time required to bar by limitation the action of a complainant shall be the same as are established by law for all cases.

ART. 37. The provisions contained in the foregoing articles of the present title shall be applicable to those who, without any right to do so, make use of the name of a merchant or the title or designation of a commercial house or factory, as set forth in title 2 of the present law.

TITLE 5.—*Transitory provision.*

ART. 38. Manufacturers who, at the time of the promulgation of the present law, may be in possession of a trade-mark within the territory of the Republic shall not be entitled to the exclusive use of the same, except upon fulfilling the conditions required by the present law; and for this purpose the period of one year to be counted from the date of promulgation is hereby granted to them.

ART. 39. In case that before the promulgation of the present law several manufacturers have made use of the same trade-mark, the right to the exclusive use thereof shall be given to the one proving to have made first use of it.

Should these parties be unable to prove priority in the use of the trade-mark, the ownership shall be given to the one doing the greatest amount of business.

ART. 40. Parties failing to register a trade-mark within the period fixed in article 38 of the present law shall not be entitled to take advantage of the use made thereof before the sanction of the present law to claim the right of priority.

ART. 41. Before issuing a certificate of trade-mark within one year after the promulgation of the present law, the application of the interested party or parties shall be published for thirty days, at the applicant's expense, in a newspaper of the capital of the Republic, or of his residence should there be any published there.

ART. 42. In order that foreign trade-marks may be given the protection accorded by this law, they shall have to be registered in conformity with its provisions.

The owners of foreign trade-marks, or their duly accredited agents, are the only ones authorized to apply for their registration.

ART. 43. The Executive Power shall make such rules as may be necessary for the execution of the present law.

ART. 44. Let it be transmitted to the Executive Power.

Appendix No. 9.

TREATIES AND CONVENTIONS ENTERED INTO BY PARAGUAY WITH OTHER NATIONS.

ARGENTINE REPUBLIC.

Treaty of peace, February 3, 1876.
Treaty of limits, February 3, 1876.
Treaty of extradition, March 6, 1877.
Postal convention, March 17, 1877.
Consular convention, March 14, 1877.

BRAZIL.

Treaty of peace, January 9, 1872.
Treaty of limits, January 9, 1872.
Treaty for the extradition of criminals, January 16, 1872.
Treaty of amity, commerce, and navigation, May 28, 1884.

BELGIUM.

Convention of commerce and navigation, February 15, 1894.

FRANCE.

Convention of commerce and navigation, July 21, 1892.

GERMANY.

Treaty of commerce, July 21, 1887.

GREAT BRITAIN.

Treaty of amity, commerce, and navigation, October 16, 1884.

ITALY.

Treaty of amity, commerce, and navigation, August 22, 1893.

PORTUGAL.

Treaty of amity, commerce, and navigation, November 9, 1878.
Consular convention, November 9, 1878.

SPAIN.

Treaty of peace and amity, September 10, 1880.

UNITED STATES OF AMERICA.

Treaty of amity, commerce, and navigation, February 4, 1859.

URUGUAY.

Treaty of peace and amity, April 20, 1883.
Convention for the extradition of criminals, April 30, 1883.

OTHER TREATIES.

The following treaties were concluded in Montevideo (South American Congress) between the Argentine Republic, Bolivia, Peru, Paraguay, and Uruguay:

Treaty on trade-marks, January 16, 1889.

Treaty on international commercial law, February 12, 1889.

Treaty on literary and artistic property, January 11, 1889.

Treaty on international criminal law, January 23, 1889.

Treaty on international civil law, February 12, 1889.

Treaty on international law of procedure, January 11, 1889.

Additional protocol for the application of the laws connected with the international private law, February 13, 1889.

Treaty on patents of inventions, January 16, 1889.

Convention upon the exercise of liberal professions, February 4, 1889.

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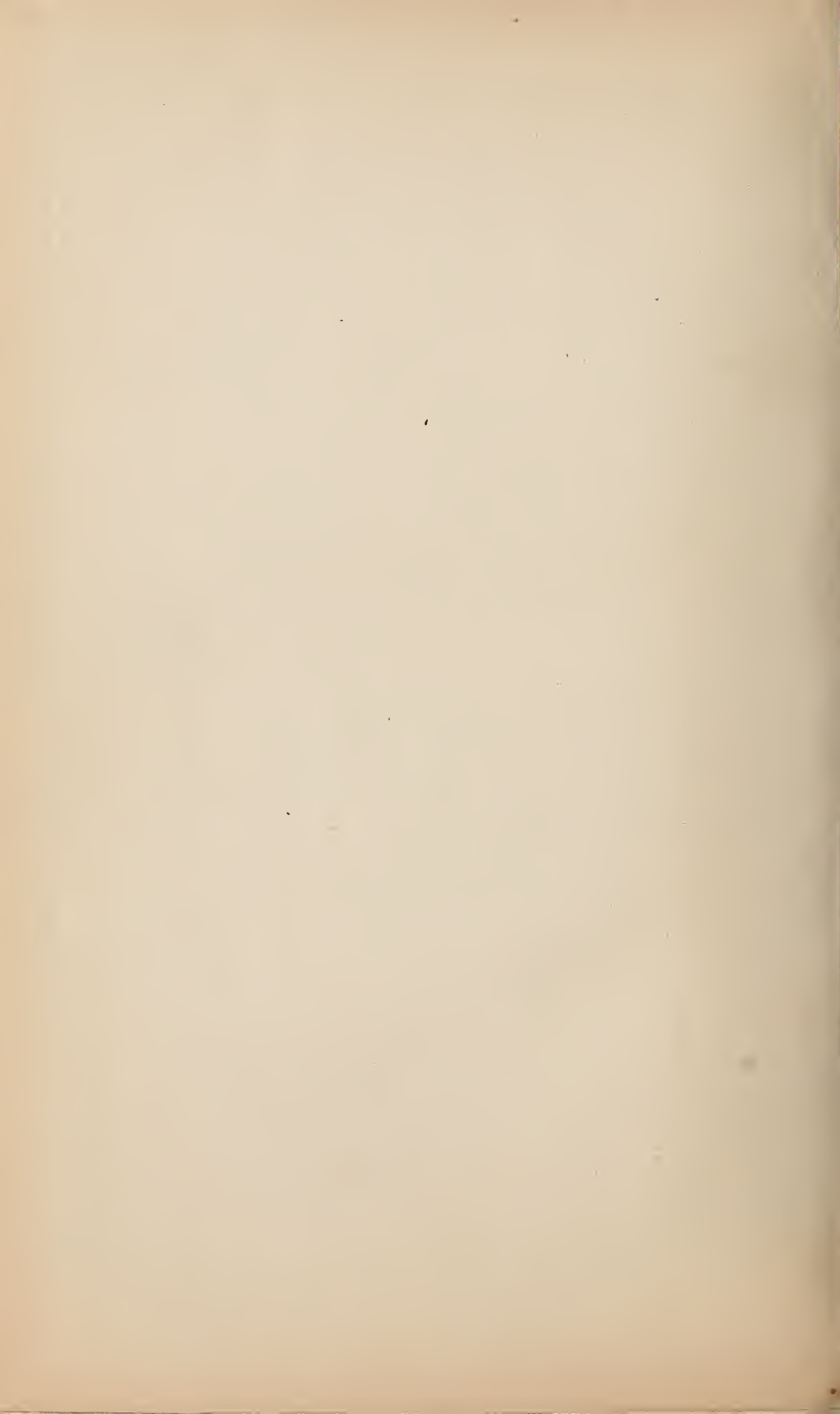
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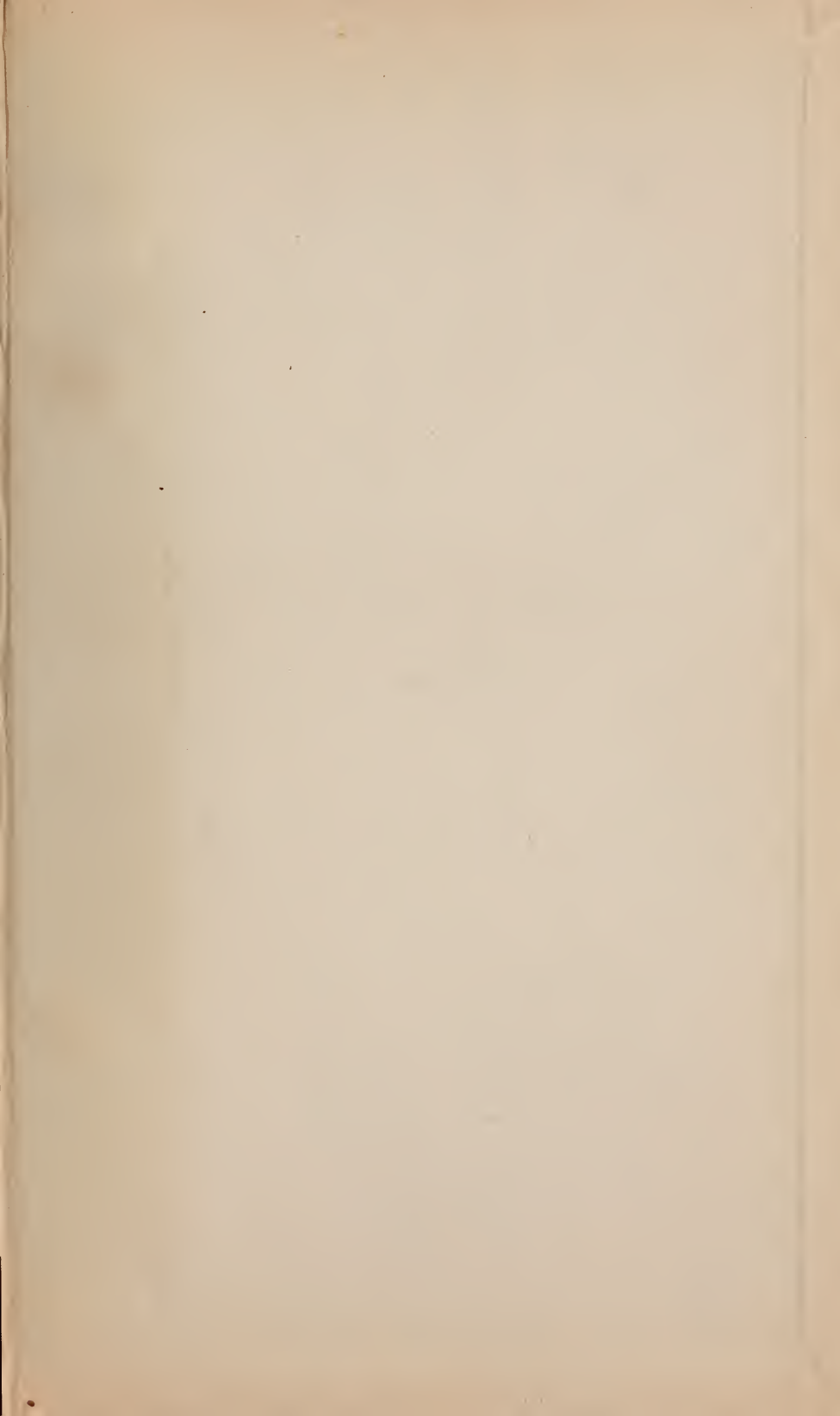
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